STATE OF MINNESOTA

COUNTY OF RAMSEY

In the Matter of the Proposed
Amendments to 6 MCAR § 4.8024

MINNESOTA POLLUTION

CONTROL AGENCY

STATEMENT OF NEED
AND REASONABLENESS

As part of the amendments to the Minnesota Pollution Control Agency rules 6 MCAR §§4.8014, 4.8015, 4.8024, and 4.8025 which became effective January 26, 1981, a new class of waters known as Class 7 Limited Resource Value waters was established and a number of waters were given this classification. During and subsequent to the public hearing process on these amendments, formal requests were received from interested parties requesting that additional water segments be reclassified as Class 7 Limited Resource Value. Provisions have been established allowing for the reclassification of additional waters to this classification, provided they meet the criteria established for Class 7 Limited Resource Value waters based on a water assessment. These assessments were performed on each of the water segments in question for the purpose of evaluating their fisheries and recreational use potentials. Once the appropriate use classifications have been determined, effluent standards for wastewater discharges to these waters may be established. The need exists to reclassify waters that meet the criteria set for the Class 7 use classification so that overly restrictive effluent standards are not imposed on dischargers to waters that, due to natural or person-induced conditions, cannot be maintained as a fishery or as a water related recreational resource.

Waters included in the Class 7 Limited Resource Value use classification include surface waters of the State which are of limited value as a water resource and where water quantities are intermittent or less than one cubic feet per second at the once in ten year, seven day low flow. These waters shall be protected so as to allow secondary body contact use, to preserve the groundwater for use as a potable water supply and to protect aesthetic qualities of the water. In conjunction with those factors listed in Minn. Stat. § 115.44, subd. 2 and subd. 3(1978), the Agency, in cooperation and agreement with the Department of Natural Resources with

respect to determination of fisheries values and potential, shall determine the extent to which the waters of the State demonstrate the conditions set forth below:

a. The existing fishery and potential fishery are severely limited by natural conditions as exhibited by poor water quality characteristics, lack of habitat or lack of water;

b. The quality of the resource has been significantly altered by human activity and the effect is essentially irreversible; and

c. There are limited recreational opportunities (such as fishing, swimming, wading, or boating) in and on the water resource.

Conditions "a" and "c" or "b" and "c" must be established by the Agency water assessment procedure before the waters can be classified as Class 7 Limited Resource Value waters.

The attached water assessment of Buhl Creek near Buhl, which was performed on April 14, 1981, establishes the reasonableness of proposing a segment of Buhl Creek as a Class 7 water.

The segment of Buhl Creek being proposed for a Class 7 classification is approximately one mile long and is located in Great Scott Township in St. Louis County. Iron ore mining is the predominant land use in the area. The creek channel in the proposed Class 7 segment meanders through a swampy low land area to a point where it is then channelized around a mine dump about ¼ mile south of U. S. Highway 169. The once in ten year, seven day low flow is estimated to be 0.5 cubic feet per second. According to a local resident of Buhl, there is normally very little flow in the upper reaches of Buhl Creek. Because of this lack of water in the creek (condition b), the recreational opportunities in and on this creek are limited (condition c). It is therefore reasonable to classify this segment of Buhl Creek as a Class 7 water.

MINNESOTA POLLUTION CONTROL AGENCY
Stream Assessment Worksheet

City: Buhl
County: St. Louis
Flow design.
Flow actual: 0.220 MGD
Township: 58
Type of Treatment: HTF
Range: 19
Receiving Water: Buhl Creek
Section: 29
Basin: 08-23 Lake Superior
major
Watershed Unit: 04010201 (USGS cataloging unit no.) 3 (Mn. equivalent unit no.)

Downstream Receiving Water

1. Six mile Lake
2. Dempsey Creek
3. East Swan River

Population: 1303 (1970 Census)

Assessment Stations

Field No.	Location
1	Buhl Creek, culvert under USNTH-169 in S20, T58, R19
2	Buhl Creek, bridge on Co. Rd. 642 in S1, T57, R19

Date of Field Observations: April 14, 1981

MPCA Personnel: Gerald Blaha — PCS, Int. (Classification)

MPCA Regional Staff: Notified

Other Persons Contacted:

DNR Fisheries Manager: William Johnson — Grand Rapids Area

Phone: 218/327-1730

PHYSICAL FEATURE		Station on Receiving Water 1	2	3	4	5	NOTES
Watershed Character (maps or observation)	Size (sq. mi.)	4					
	Soil Type	clayey	clayey				sandy, clay, etc.
	Vegetation Type	forest	forest				
	Predominant Land Use	mining	mining				agr., for., urbar., other
Flow Estimations	Cross Section Width(ft)	1.5	15				
	Depth(ft)	2.5	>3				
	Current (fps)	0.5	0.5				
	Flow Rate(est) (cfs)	1.8	>22				
Estimate Overall Stream Width & Depth	Width (average) (ft)	marshy	15-20				
	Depth (average) (ft)	area	>3				
	(maximum at site) (ft)						
Predominant Bottom Type	Stony						
	Sandy						
	Mud	X	X				
	Humus						
Irretriv. Channel Alteration	Natural %	100	100				
	Channelized % (man altered)						
Pools or Refuges For Fish (no. observed/depth)							
Discharge Record	7Q10 Annual	0.5					
	7Q10 Seasonal S W						

USGS Record. Location of nearest station: 04018900 East Two River near Iron Junction

Type of record: continuous partial miscellaneous

Period of record:

CHEMICAL CHARACTERISTICS		Station on Receiving Water 1	2	3	4	5	NOTES
Field Measurements	Dissolved Oxygen (ppm) / Time	10.8 / 1055	10.2 / 1130	/	/	/	
	Temperature (°C)	1.0	3.0				
	Percent Saturation						
	pH / Time	6.5@6.0°C / 1240	6.4@6.0°C / 1240	/	/	/	
Field Estimates	Turbidity (transparency) High(H) : <0.5 ft. Moderate(M): 0.5-1.0ft. Low(L) : >1.0 ft.	H	H				

WATER SAMPLES TAKEN :

[X] None

[ ] At stations: _____. See attached lab sheets. (use PCA-22 for the billing number)

CLIMATIC CONDITIONS: (statement to include preceding weather and rainfall events

Current condition: Sunny, 0.0°C

Recent conditions: Rain 1.5 inches last 2 days, ~2.4 total inches in the last 2 weeks

Source of information: Buhl Resident - (well driller)

BIOLOGICAL CHARACTERISTICS		Station on Receiving Water 1	2	3	4	5	NOTES
Bank Vegetation	Absent						
	Herbs & grasses						
	Brush (including scattered trees, herbs and grasses)	X	X				
	Tree lined with herbaceous ground cover						
Aquatic Vegetation	Floating plants duckweed, lily pads						
	Submerged rooted plants						
	Emergent plants - cattails, bullrushes, grasses, etc.						
Phytoplankton (algae)	Excessive - very green						Buhl Creek was a
	Moderate - green tinge						milky - reddish -
	Low - no green visible						brown color
	Attached filamentous						
Fish Observed	None	X	X				
	Dead only						
	Minnows observed						
	Game fish observed						
	Rough fish observed						
Barriers to fish movement observed (state type)							culverts, dams, snags, etc.
Invertebrates	None observed	X	X				
	Organisms observed on rocks						
	Organisms observed in/on other substrate (specify)						

CULTURAL FEATURE		Station on Receiving Water 1	2	3	4	5		NOTES
Recreational Uses Potential/Observed (indicate obs. for those actually observed)	Bathing							
	Fishing		X					
	Hunting	X	X					
	Picnicking							
	Hiking							
	Nature Study		X					
	Camping							
Type of Drainage Sources Observed	Highways	X						
	Feed Lots							
	Farm Tiles							
	Combined Sewer Overflows							
	Forest							
	Urban Storm-water Runoff							
Property Adjacent to Rec. Water (¼ mi. dist.)	No. of farm residences							
	No. of Municipal residences		1					
Nuisance Complaints Record	Odor							
	Spills							
	Fish Kills							
Discharges which impact assessed waterway	Municipal		X					
	Industrial Process							
	Industrial Cooling							
	Power Plant Cooling Water							
	Other	X	X					Mine drainage

DNR Fisheries Information:

William Johnson, Grand Rapids Area Fisheries Manager contacted April 16, 1981. The DNR survey information contained in the October 26, 1977 water assessment was discussed. Also discussed was the information provided to the MPCA by the local resident of Buhl regarding the upper portion of Buhl Creek. Mr. Johnson indicated that a Class 7 designation would be a reasonable classification for the upper reach of Buhl Creek because of its limited fisheries value and the because of the channelization in the upper stretch.

Comments: (including comments by local residents)

A well driller who is a local resident of Buhl indicated that the flow in Buhl Creek is very high due to recent rains, there is very little to no flow in Buhl Creek near WWTF normally. He does not think there are any fish in Buhl Creek in this area. He noted that there are fish in Sixmile Lake.

GTB: Buhl Creek has been channelized around a mine dump in the NW¼ of S29, T58, R19.

SUMMARY ASSESSMENT SHEET

mmary of the assessed waterway: Buhl Creek to the unnamed lake in S29, T58, R19

tream characteristics bservations or Projected stimates	Limited Resource Value Water 2 mg/l D.O. maintained (non-fishable-swimmable)	Fisheries and Recreation Use Classification 5 mg/l D.O. maintained (fishable-swimmable)
low Characteristic	Normally dry stream bed, would not support fishery, has short term runoff, no dilution flow for effluent	Non-continuous for only short durations, supports fishery, feeder stream to downstream waters, some dilution of effluent available
-Summer base flow period	No Flow /X/	Flow (may be very small) /_/
-Winter base flow	No Flow /X/	Flow (may be very small) /_/
-Velocity	None to very slow (less than .1 fps) /_/	Slow to fast (greater than .1 fps) /X/
hannel Characteristic		
-Alterations	Channelized, or with major alterations /_/	Natural or with minor alterations /X/
-Bank Vegetation	Grass or herbaceous cover only /_/	Scattered to complete brush or tree cover /X/
-Bottom Substrate	Mud, sludge or organic debris /X/	Silt, sand, gravel or rock /_/
Quality Characteristic	Interfere with fishable/ swimmable goals	Achieve fishable/swimmable goals
-Dissolved Oxygen	Less than 5 during day /_/	Greater than 5 during day /X/
-Turbidity	High /X/	Moderate to low /_/
-Fish	Not observed or known to be present /X/	Known to be present /_/
Cultural Characteristic		
-Permanent change or sources of pollution	Present /X/	Minimal /_/
-Recreational Uses	Not observed /X/	Observed or possible /_/
RECOMMENDED CLASSIFICATION	Limited Resource Value /X/	Fisheries and Recreation Use Classification /_/

Maps Used	Names
USGS	Buhl
County Highway	St. Louis, Sheet 3
Other	

Additional pre-survey information:

Recommendations:

The upper portion of Buhl Creek has a very limited watershed size. According to the local resident interviewed, there normally is very little if any flow in the upper reaches of Buhl Creek. This fact coupled with the amount of channelization around the mine dump demonstrates that the recreational opportunities in and on this creek in this area are very limited. It is recommended that Buhl Creek be classed Class 7 Limited Resource Value in S20, 29, T58N, R19W.

Prepared by: Gerald Blaha

Date: 1MAY81

Reviewed by: [signature]

Date: 8/13/81

Reviewed by:

Date:

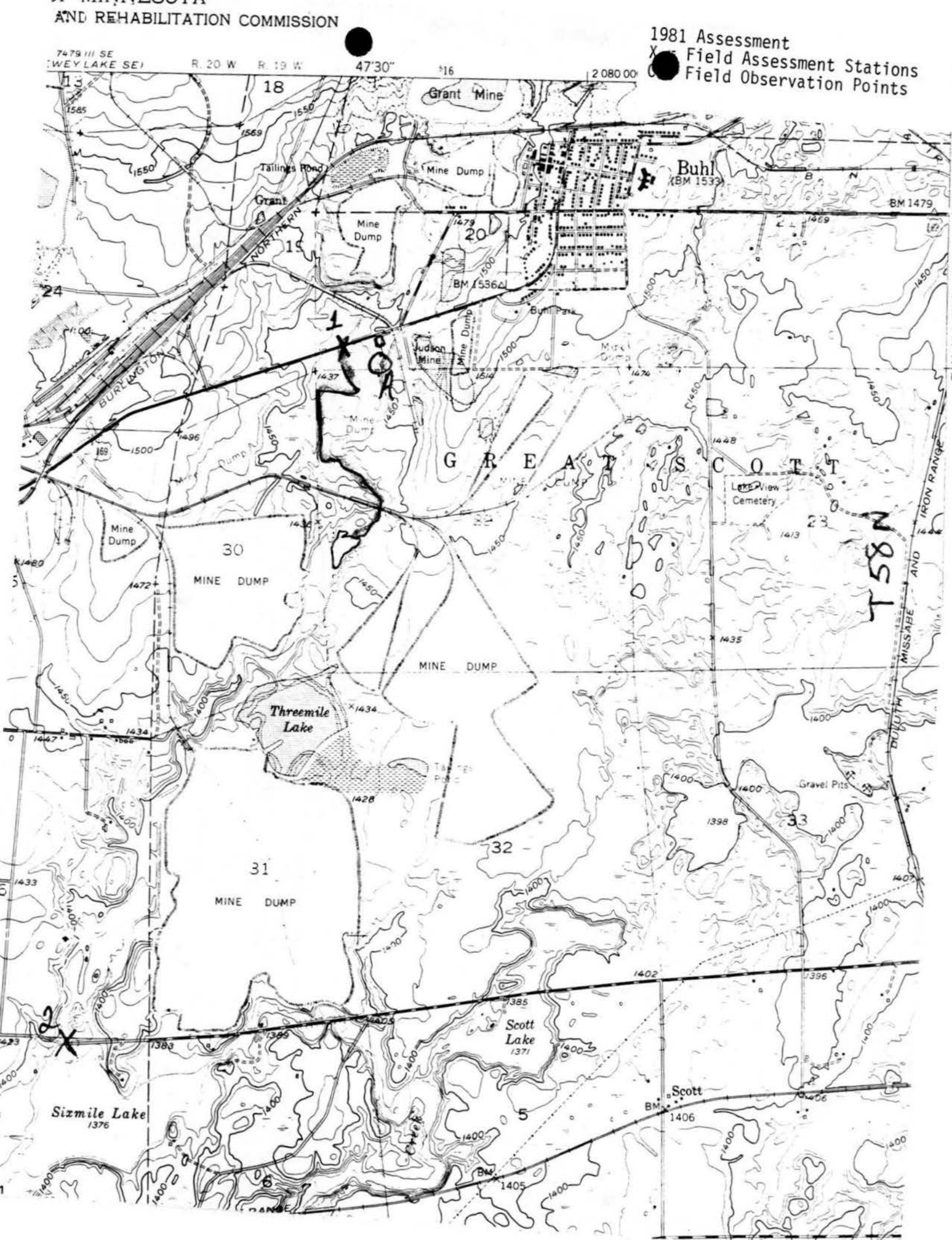
Reviewed by:

Date:

Comments:

AND REHABILITATION COMMISSION

1981 Assessment
X Field Assessment Stations
Field Observation Points



Buhl Creek

Station #1 - upstream

Swampy area through
which Buhl Creek
flows near Station #1