Contract no 73342

BRAUN INTERTEC

Braun Intertec Corporation
2309 Palace Street
LaCrosse, WI 54603

Phone: 608.781.7277
Fax: 608.781.7279
Web: braunintertec.com

April 7, 2014 Proposal LC-13-08064

Ms. Jennifer Bury
Minnesota Department of Natural Resources
Division of Fisheries & Wildlife
500 Lafayette Road
St Paul, MN 55155

Re: Pre-Project Dredge Material Sediment Core & Baseline Contaminant Analysis
Weaver Bottoms Sediment Basin Maintenance Project
Kellogg, Minnesota

Dear Ms. Bury:

Braun Intertec has completed the sediment sampling activities at Weaver Bottoms near Kellogg, Minnesota. The objective of the work was to characterize the in-place sediment (future dredge material) for potential disposal purposes. Our scope of services is based on the Request for Proposal (RFP) provided by Minnesota Department of Natural Resources (MN DNR) (client), dated December 4, 2013.

Background

Based on information provided in the RFP, approximately 100,000 to 500,000 cubic yards (CY) of sediment are planned for removal of sediment within Weaver Bottoms to restore overwintering fish habitat. Dredge depths will extend from water and/or ice covered surface to a depth of 6 feet into sediments.

Sediment Sampling

Pursuant to the RFP, Braun Intertec collected six (6) sediment core samples at locations spatially located to best represent the proposed dredge area as defined depicted in the RFP (Figure 2.). Each core was 6 feet in depth (2 feet below maximum dredge depth of 4 feet into sediment). Samples were collected at depths ranging from 1- to 2-foot intervals to 5- to 6-foot intervals based in order to obtain representative ranges within sediments and ability to obtain a soil sample due to saturation of sediments.

Twelve (12) sieve samples were collected and analyzed for particle size by ASTM D-422.

Samples were submitted for chemical analysis, as described in the section below. The samples were collected at each location by driving a push probe sampler or auger into the underlying sediment using hand-driven sampling equipment.

For each core advanced, soil sample textures will be evaluated by visual methods as the samples are collected and noted in the field notes. Minnesota Pollution Control Agency (MPCA) guidance requires

Consultant's Report

that if distinct sediment layering is observed during sample collection, testing must be performed on each distinct layer.

Drilling tools were cleaned prior to and between sampling runs by washing the equipment with a brush and water containing trisodium phosphate and rinsing the equipment with water.

The samples were transferred to clean laboratory-supplied containers, preserved in accordance with Braun Intertec Standard Operating Procedures (SOPs) and transported to the Pace Analytical Services, Inc. for analysis. Chain of Custody were initiated at the time of sampling and maintained throughout the process.

Sample Analytical Parameters

Pursuant to the RFP, Braun Intertec submitted each sample for sieve analysis and held the analytical samples. Each sample was run for the #200 wash using ASTM C117 in place of the standard sieve analysis.

Samples for which more than 7% passes through the 200 sieve were analyzed for the baseline sediment parameters pursuant to the RFP and the MPCA Managing Dredged Materials (September 2012) guidance document. The parameters are as follows:

- Metals – arsenic, cadmium, chromium III, chromium VI, copper, lead, mercury, nickel, selenium, and zinc by SW-846 EPA 6010.
- Total phosphorus using method EPA365.3/365.4.
- Nitrate & nitrite using SM 4500-NO3 F.
- Ammonia nitrogen using SM 4500 NH3.
- Total Kjeldahl nitrogen using SM 4500 N.
- Polychlorinated biphenyls (PCBs) using method SW-846 8082.
- Total organic carbon using SW-846-9060.

Results

Sediments
Sediments observed in each boring consisted of organic silt/clay with sand and sandy organic silt/clay to the termination depth of each hand auger. Soil boring logs with descriptions of the various soil strata encountered during the soil hand auger operations are attached.

The results of the 200 wash analysis indicated that all samples passed less than 93% on the #200 sieve. As a result, chemical analysis was performed on these samples.

Soil Chemistry
Analytical results for the sample from HA-1, HA-2, HA-3, HA-4, HA-5 and HA-6 indicated the following:

Metals

- Chromium IV and selenium were not detected at or above the laboratory method reporting limit (MRL) in the samples analyzed. Although chromium VI was not detected above the MRL, the reporting limit was above the MPCA Level 1 management category.

- Arsenic, cadmium, chromium III, copper, lead, mercury, nickel, selenium, and zinc were detected at concentrations above the laboratory MRL in each sample analyzed. However, in each case, the concentration was below the MPCA Level 1 management category with the exception of arsenic at HA-1, HA-4 and HA-5 but the arsenic concentration for these locations was below the MPCA Level 2 management category.

PCBs

- PCBs were not detected at or above the laboratory MRL for eight PCB compounds included in the analytical list.

Other Parameters

- Ammonia, total Kjeldahl, total phosphorous and total organic carbon were detected at various concentration. Nitrate+nitrite was not detected at or above the laboratory MRL. Management criteria have not been established for these compounds. The MPCA requirement to include these analyses is geared toward the end-use of the dredge sediments and the results should be provided to disposal facilities or receiving land-owners. Additional consultation with the MPCA may be required.

Recommendations

Based on the analytical results from our sampling and testing, excavated lake sediments in the proposed dredge area within Prichard Lake are suitable for industrial reuse. Due to only the concentration of arsenic exceeding the MPCA Level 1 management category at HA-1, HA-4 and HA-5 and the low levels exhibited at these locations and the fact that chromium VI was not detected above the MRL at these locations, land application for agricultural reuse may be considered from MPCA for the dredge sediment. Therefore, we recommend that these results be submitted for approval by MPCA prior to beginning any dredging work.

General

Our scope of our work was determined by our understanding of the rules and guidance of the Minnesota Pollution Control Agency as they apply to the objectives of the project set forth in the RFP. Therefore, the proposed scope of work is not warranted to conform explicitly to current MPCA written guidance.

We appreciate the opportunity to provide our professional services on this project. Please call John Wyciskalla or Mark Gretebeck at 608.781.7277 if you have questions about the report or require additional information.

Sincerely,

BRAUN INTERTEC CORPORATION

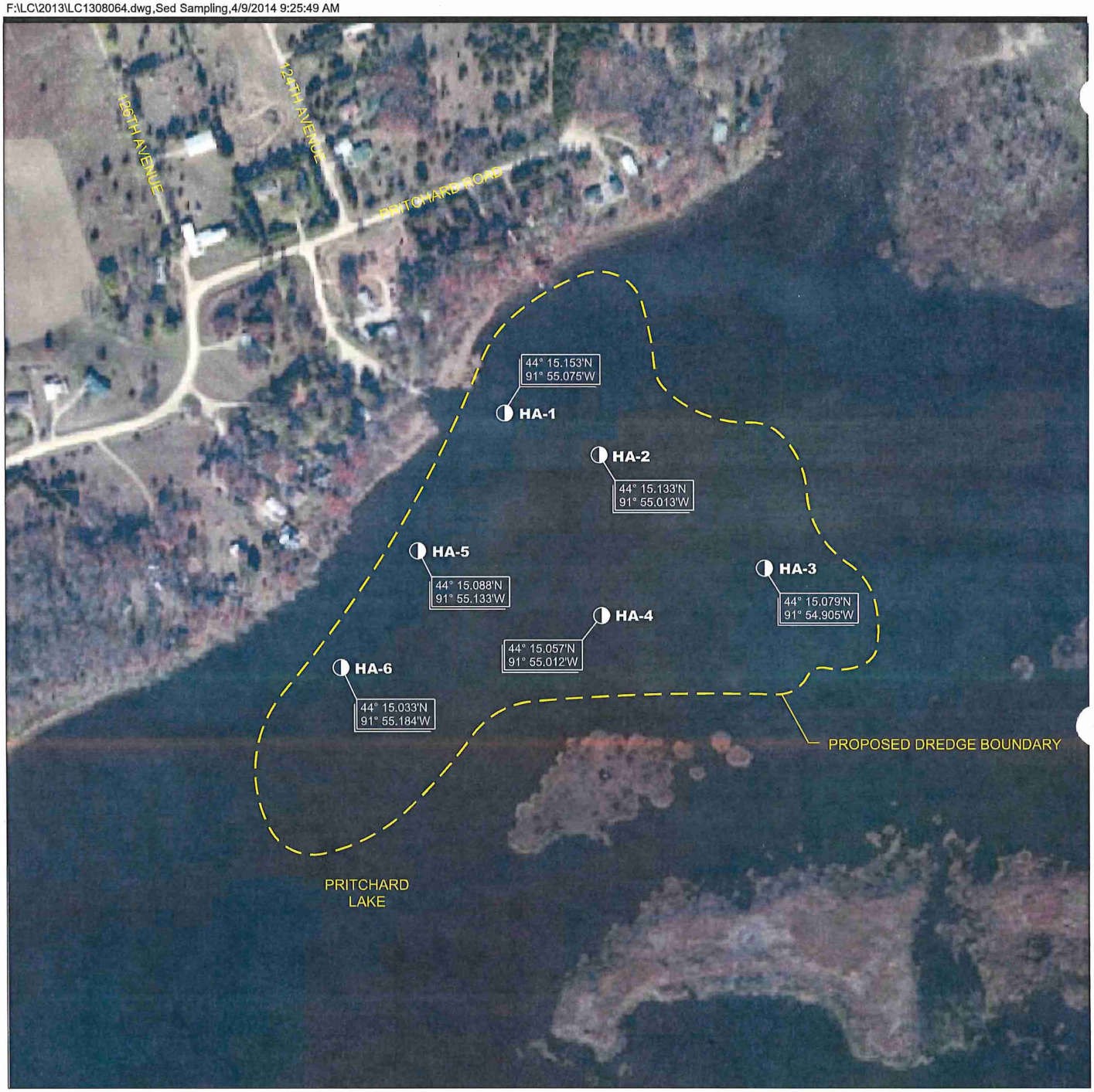
John J. Wyciskalla, PG
Associate Principal/Senior Scientist

Mark L. Gretebeck
Principal

Attachment:
Sediment Sampling Location Map
Summary Table of Sediment Testing Results
Laboratory Analytical Reports
Soil Hand Auger Logs

Sediment Sampling Location Map

F:\LC\2013\LC1308064.dwg,Sed Sampling,4/9/2014 9:25:49 AM



HAND AUGER SOIL BORING LOCATION

N

200' 0 400'

SCALE: 1"= 400'

Sheet: of
Fig:

Project No:	LC1308064
Drawing No:	LC1308064
Scale:	1"= 400'
Drawn By:	JAG
Date Drawn:	4/7/14
Checked By:	JJW
Last Modified:	4/9/14

SEDIMANT SAMPLING LOCATIONS
SEDIMENT TESTING
WEAVER BOTTOMS BASELINE SEDIMENT ANALYSIS
PRITCHARD LAKE
KELLOGG, MINNESOTA

BRAUN INTERTEC
11001 Hampshire Avenue So.
Minneapolis, MN 55438
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Summary of Sediment Sampling Testing Results

Braun Intertec Corporation
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Web: braunintertec.com

March 26, 2014

Project No.: LC-13-08064

Ms. Jennifer Bury
Minnesota Department of Natural Resources
500 Lafayette Road
St. Paul, MN 55155-4002

Re: Laboratory Soil Testing (Particles Passing No. 200 Sieve)
Weaver Bottoms Baseline Sediment Analysis
Kellogg, MN

Dear Ms. Bury:

This letter presents the laboratory test results for soil particles passing a number 200 sieve (P200) by washing according to the procedures outlined in ASTM C117-13. Results for each sample can be found in the table below.

Laboratory Test Results Summary

Sample Number	Sample Depth (ft)	Sampled By	USCS Classification	Moisture Content (%)	Material Passing No. 200 Sieve (%)
HA-1	3	David Bradshaw	Sandy Organic Silt/Clay	314	56.5
HA-1	5-6	David Bradshaw	Sandy Organic Silt/Clay	350	69.5
HA-2	1-2	David Bradshaw	Organic Silt/Clay with Sand	215	84.3
HA-2	3-4	David Bradshaw	Sandy Organic Silt/Clay	321	67.7
HA-3	1-2	David Bradshaw	Organic Silt/Clay with Sand	162	84.2
HA-3	5-6	David Bradshaw	Sandy Organic Silt/Clay	80	62.5
HA-4	1-2	David Bradshaw	Organic Silt/Clay with Sand	142	85.8
HA-4	5-6	David Bradshaw	Organic Silt/Clay with Sand	166	73.9
HA-5	1-2	David Bradshaw	Organic Silt/Clay with Sand	232	76.9
HA-5	3-4	David Bradshaw	Organic Silt/Clay with Sand	269	71.7
HA-6	1-2	David Bradshaw	Organic Silt/Clay with Sand	241	80.4
HA-6	3-4	David Bradshaw	Sandy Organic Silt/Clay	295	67.8

Thank you for the opportunity to be of service on this project. If we can provide additional assistance, please call Scott Willinger at 608.781.7277.

Sincerely,

BRAUN INTERTEC CORPORATION

Scott Willinger
Laboratory Manager

Table 1
Summary Tables of Sediment Testing Results
Weaver Bottoms, Prichard Lake MN
LC-13-08064

Compound/Parameter	CAS No.	Sample Identifier						Recreational Soil Reference Value (mg/kg)	Residential Soil Reference Value (mg/kg)	Short Term Worker Soil Reference Value (mg/kg)	Industrial Soil Reference Value (mg/kg)	Tier I Soil Leaching Value (mg/kg)	Dredge Management Level 1	Dredge Management Level 2
		HA-1 (1-2')	HA-2 (1-2')	HA-3 (3-4')	HA-4 (3-4')	HA-5 (3-4')	HA-6 (1-2')							
		3/4/2014	3/4/2014	3/4/2014	3/4/2014	3/4/2014	3/4/2014							
		4092914001	4092914002	4092914003	4092914001	4092914001	4092914001							
Organic Content														
Total Organic Carbon	7440440	48800	43000	47900	59200	60800	49300	NE	NE	NE	NE	NE	NE	NE
Polychlorinated Biphenyls (mg/kg)														
PCB 1016	12674-11-2	<0.0859	<0.073	<0.090	<0.0809	<0.0994	<0.0782	NE	NE	NE	NE	NE	NE	NE
PCB 1221	11104-28-2	<0.0859	<0.073	<0.090	<0.0809	<0.0994	<0.0782	NE	NE	NE	NE	NE	NE	NE
PCB 1232	11141-16-5	<0.0859	<0.073	<0.090	<0.0809	<0.0994	<0.0782	NE	NE	NE	NE	NE	NE	NE
PCB 1242	53469-21-9	<0.0859	<0.073	<0.090	<0.0809	<0.0994	<0.0782	NE	NE	NE	NE	NE	NE	NE
PCB 1248	12672-29-6	<0.0859	<0.073	<0.090	<0.0809	<0.0994	<0.0782	NE	NE	NE	NE	NE	NE	NE
PCB 1254	11097-69-1	<0.0859	<0.073	<0.090	<0.0809	<0.0994	<0.0782	NE	NE	NE	NE	NE	NE	NE
PCB 1260	11096-82-5	<0.0859	<0.073	<0.090	<0.0809	<0.0994	<0.0782	NE	NE	NE	NE	NE	NE	NE
Total PCBs	1336-36-3	<0.0859	<0.073	<0.090	<0.0809	<0.0994	<0.0782	1.4	1.2	8	8	2.1	1.2	8
Metals (mg/kg)														
Arsenic	7440-38-2	9.7	8.2	8.1	10.8	11.7	6.5	11	9	70	20	15.1	9	20
Cadmium	7440-43-9	0.82J	1.8	1.3J	1.0J	1.1J	1.0J	35	25	NE	200	4.4	25	200
Chromium, Trivalent	16065-83-1	30.0	45.4	40.1	32.7	38.2	31.7	NE	44000	NE	100000	NE	44000	100000
Copper	7440-50-8	25.1	37.6	30.3	25.7	30.8	25.4	100	100	3000	9000	400	100	9000
Lead	7439-92-1	23.1	29.7	23.5	21.5	26.8	21.3	300	300	700	700	525	300	700
Mercury	7439-97-6	0.096	0.10	0.063	0.10	0.080	0.096	1.2	0.5	0.4	1.5	1.6	0.5	1.5
Nickel	7440-02-0	27.1	34.0	31.5	27.8	33.7	25.3	800	560	1400	2500	88	560	2500
Selenium	7782-49-2	<1.9	<1.5	<1.8	<1.8	<2.1	<1.7	200	160	1400	1300	1.5	160	1300
Zinc	7440-66-6	95.3	121	107	94.8	113	90.1	12000	8700	85000	75000	1500	8500	75000
Other Parameters														
% Solids (% Wt)	SOLIDS	27.9	36.4	44.3	25.5	27.9	31.9	NE	NE	NE	NE	NE	NE	NE
Ammonia as N	7664-41-7	675	542	602	569	771	533	NE	NE	NE	NE	NE	NE	NE
Chromium, Hexavalent	18540-29-9	<89.6	<68.7	<56.4	<98	<89.6	<78.5	120	87	340	650	18	87	650
Nitrate + Nitrite as N	C-005	<8.5	<7.4	<9.0	<8.1	<10.0	<7.8	NE	NE	NE	NE	NE	NE	NE
Phosphorus, Total as P	7723-14-0	1210	1140	1010	988	1520	1030	NE	NE	NE	NE	NE	NE	NE
Total Kjeldahl Nitrogen	TKN	7770	5250	7730	9030	9050	5390	NE	NE	NE	NE	NE	NE	NE

Notes:
J Flag - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
mg/kg = Millograms per kilogram.
< = Less than the reporting limit indicated in parentheses.
NE = Not Established
SRV - Soil Reference Value established by the Minnesota Pollution Control Agency; 1999, revised 2009
SLV - Soil Leaching Value established by the Minnesota Pollution Control Agency; 1999, revised 2005
Dredge Management Level 1= results less than SRV 1 (suitable for residential landuse)
DredgeManagement Level 2= results less than SRV 2 (suitable for industrial landuse)
Dredge Management Level 3- exceeds SRV2 (must be treated or disposed in a landfill with MPCA approved industrial waste management plan)

Laboratory Analytical Reports

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

April 02, 2014

John Wyciskalla
Braun Intertec Corporation
2309 Palace Street
La Crosse, WI 54603

RE: Project: LC-13-08064 WEAVER BOTTOMS.SED
Pace Project No.: 4092914

Dear John Wyciskalla:
Enclosed are the analytical results for sample(s) received by the laboratory on March 06, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Brian Basten
brian.basten@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
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(920)469-2436

CERTIFICATIONS

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

Green Bay Certification IDs
1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 11888
North Dakota Certification #: R-150
South Carolina Certification #: 83006001
US Dept of Agriculture #: S-76505
Wisconsin Certification #: 405132750

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SAMPLE SUMMARY

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4092914001	**HA-1 (1-2')**	Solid	03/04/14 10:15	03/06/14 07:45
4092914002	**HA-2 (1-2')**	Solid	03/04/14 10:50	03/06/14 07:45
4092914003	**HA-3 (3-4')**	Solid	03/04/14 12:15	03/06/14 07:45
4092914004	**HA-4 (3-4')**	Solid	03/04/14 13:25	03/06/14 07:45
4092914005	**HA-5 (3-4')**	Solid	03/04/14 14:05	03/06/14 07:45
4092914006	**HA-6 (1-2')**	Solid	03/04/14 14:50	03/06/14 07:45

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SAMPLE ANALYTE COUNT

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

Lab ID	Sample ID	Method	Analysts	Analytes Reported
4092914001	HA-1 (1-2')	EPA 8082	BLM	10
		EPA 6010	MMZ	8
		EPA 7471	LMS	1
		ASTM D2974-87	SKW	1
		EPA 300.0	JCJ	2
		EPA 350.1	HMB	1
		EPA 351.2	HMB	1
		EPA 365.4	DAW	1
		EPA 9060 Modified	TJJ	4
4092914002	HA-2 (1-2')	EPA 8082	BLM	10
		EPA 6010	MMZ	8
		EPA 7471	LMS	1
		ASTM D2974-87	SKW	1
		EPA 300.0	JCJ	2
		EPA 350.1	HMB	1
		EPA 351.2	HMB	1
		EPA 365.4	DAW	1
		EPA 9060 Modified	TJJ	4
4092914003	HA-3 (3-4')	EPA 8082	BLM	10
		EPA 6010	MMZ	8
		EPA 7471	LMS	1
		ASTM D2974-87	SKW	1
		EPA 300.0	JCJ	2
		EPA 350.1	HMB	1
		EPA 351.2	HMB	1
		EPA 365.4	DAW	1
		EPA 9060 Modified	TJJ	4
4092914004	HA-4 (3-4')	EPA 8082	BLM	10
		EPA 6010	MMZ	8
		EPA 7471	LMS	1
		ASTM D2974-87	SKW	1
		EPA 300.0	JCJ	2
		EPA 350.1	HMB	1
		EPA 351.2	HMB	1
		EPA 365.4	DAW	1
		EPA 9060 Modified	TJJ	4
4092914005	HA-5 (3-4')	EPA 8082	BLM	10

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 6010	MMZ	8
		EPA 7471	LMS	1
		ASTM D2974-87	SKW	1
		EPA 300.0	JCJ	2
		EPA 350.1	HMB	1
		EPA 351.2	HMB	1
		EPA 365.4	DAW	1
		EPA 9060 Modified	TJJ	4
4092914006	HA-6 (1-2')	EPA 8082	BLM	10
		EPA 6010	MMZ	8
		EPA 7471	LMS	1
		ASTM D2974-87	SKW	1
		EPA 300.0	JCJ	2
		EPA 350.1	HMB	1
		EPA 351.2	HMB	1
		EPA 365.4	DAW	1
		EPA 9060 Modified	TJJ	4

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SUMMARY OF DETECTION

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
4092914001	**HA-1 (1-2')**					
EPA 6010	Arsenic	9.7	mg/kg	6.3	03/07/14 14:43	
EPA 6010	Cadmium	0.82J	mg/kg	1.6	03/07/14 14:43	B
EPA 6010	Chromium	30.0	mg/kg	1.6	03/07/14 14:43	
EPA 6010	Copper	25.1	mg/kg	3.1	03/07/14 14:43	
EPA 6010	Lead	23.1	mg/kg	0.031	03/07/14 14:43	
EPA 6010	Nickel	27.4	mg/kg	3.1	03/07/14 14:43	
EPA 6010	Zinc	95.3	mg/kg	12.6	03/07/14 14:43	
EPA 7471	Mercury	0.096	mg/kg	0.020	03/14/14 09:50	
ASTM D2974-87	Percent Moisture	70.9	%	0.10	03/06/14 13:53	
EPA 350.1	Nitrogen, Ammonia	675	mg/kg	49.1	03/06/14 20:30	
EPA 351.2	Nitrogen, Kjeldahl, Total	7770	mg/kg	1490	03/10/14 21:54	
EPA 365.4	Phosphorus	1210	mg/kg	94.8	03/10/14 13:01	
EPA 9060 Modified	RPD%	20.8	%	0.10	03/17/14 09:13	
EPA 9060 Modified	Total Organic Carbon	39600	mg/kg	25000	03/17/14 09:01	
EPA 9060 Modified	Total Organic Carbon	48800	mg/kg	16700	03/17/14 09:13	
EPA 9060 Modified	Mean Total Organic Carbon	44200	mg/kg	20800	03/17/14 09:13	M0
4092914002	**HA-2 (1-2')**					
EPA 6010	Arsenic	8.2	mg/kg	5.2	03/07/14 14:45	
EPA 6010	Cadmium	1.8	mg/kg	1.3	03/07/14 14:45	
EPA 6010	Chromium	45.4	mg/kg	1.3	03/07/14 14:45	
EPA 6010	Copper	37.6	mg/kg	2.6	03/07/14 14:45	
EPA 6010	Lead	29.7	mg/kg	0.026	03/07/14 14:45	
EPA 6010	Nickel	34.0	mg/kg	2.6	03/07/14 14:45	
EPA 6010	Zinc	121	mg/kg	10.3	03/07/14 14:45	
EPA 7471	Mercury	0.10	mg/kg	0.018	03/14/14 09:52	
ASTM D2974-87	Percent Moisture	65.9	%	0.10	03/06/14 13:54	
EPA 350.1	Nitrogen, Ammonia	542	mg/kg	44.0	03/06/14 20:31	
EPA 351.2	Nitrogen, Kjeldahl, Total	5250	mg/kg	1130	03/10/14 21:55	
EPA 365.4	Phosphorus	1140	mg/kg	90.2	03/10/14 13:01	
EPA 9060 Modified	RPD%	0.94	%	0.10	03/17/14 09:38	
EPA 9060 Modified	Total Organic Carbon	43200	mg/kg	10000	03/17/14 09:35	
EPA 9060 Modified	Total Organic Carbon	42800	mg/kg	10000	03/17/14 09:38	
EPA 9060 Modified	Mean Total Organic Carbon	43000	mg/kg	10000	03/17/14 09:38	
4092914003	**HA-3 (3-4')**					
EPA 6010	Arsenic	8.1	mg/kg	6.1	03/07/14 14:52	
EPA 6010	Cadmium	1.3J	mg/kg	1.5	03/07/14 14:52	B
EPA 6010	Chromium	40.1	mg/kg	1.5	03/07/14 14:52	
EPA 6010	Copper	30.3	mg/kg	3.1	03/07/14 14:52	
EPA 6010	Lead	23.5	mg/kg	0.031	03/07/14 14:52	
EPA 6010	Nickel	31.5	mg/kg	3.1	03/07/14 14:52	
EPA 6010	Zinc	107	mg/kg	12.3	03/07/14 14:52	
EPA 7471	Mercury	0.063	mg/kg	0.020	03/14/14 09:54	
ASTM D2974-87	Percent Moisture	72.2	%	0.10	03/06/14 13:54	
EPA 350.1	Nitrogen, Ammonia	602	mg/kg	45.0	03/06/14 20:33	
EPA 351.2	Nitrogen, Kjeldahl, Total	7730	mg/kg	1500	03/10/14 21:56	
EPA 365.4	Phosphorus	1010	mg/kg	115	03/10/14 13:02	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
4092914003	**HA-3 (3-4')**					
EPA 9060 Modified	RPD%	6.9	%	0.10	03/17/14 09:49	
EPA 9060 Modified	Total Organic Carbon	49600	mg/kg	10000	03/17/14 09:45	
EPA 9060 Modified	Total Organic Carbon	46300	mg/kg	9090	03/17/14 09:49	
EPA 9060 Modified	Mean Total Organic Carbon	47900	mg/kg	9550	03/17/14 09:49	
4092914004	**HA-4 (3-4')**					
EPA 6010	Arsenic	10.8	mg/kg	6.1	03/07/14 14:54	
EPA 6010	Cadmium	1.0J	mg/kg	1.5	03/07/14 14:54	B
EPA 6010	Chromium	32.7	mg/kg	1.5	03/07/14 14:54	
EPA 6010	Copper	25.7	mg/kg	3.1	03/07/14 14:54	
EPA 6010	Lead	21.5	mg/kg	0.031	03/07/14 14:54	
EPA 6010	Nickel	27.8	mg/kg	3.1	03/07/14 14:54	
EPA 6010	Zinc	94.8	mg/kg	12.2	03/07/14 14:54	
EPA 7471	Mercury	0.10	mg/kg	0.021	03/14/14 09:56	
ASTM D2974-87	Percent Moisture	69.1	%	0.10	03/06/14 13:54	
EPA 350.1	Nitrogen, Ammonia	569	mg/kg	37.3	03/06/14 20:34	
EPA 351.2	Nitrogen, Kjeldahl, Total	9030	mg/kg	1200	03/10/14 21:57	
EPA 365.4	Phosphorus	988	mg/kg	89.3	03/10/14 13:03	
EPA 9060 Modified	RPD%	3.8	%	0.10	03/17/14 09:56	
EPA 9060 Modified	Total Organic Carbon	58100	mg/kg	10000	03/17/14 09:52	
EPA 9060 Modified	Total Organic Carbon	60300	mg/kg	11100	03/17/14 09:56	
EPA 9060 Modified	Mean Total Organic Carbon	59200	mg/kg	10600	03/17/14 09:56	
4092914005	**HA-5 (3-4')**					
EPA 6010	Arsenic	11.7	mg/kg	7.1	03/07/14 14:56	
EPA 6010	Cadmium	1.1J	mg/kg	1.8	03/07/14 14:56	B
EPA 6010	Chromium	38.2	mg/kg	1.8	03/07/14 14:56	
EPA 6010	Copper	30.8	mg/kg	3.5	03/07/14 14:56	
EPA 6010	Lead	26.8	mg/kg	0.035	03/07/14 14:56	
EPA 6010	Nickel	33.7	mg/kg	3.5	03/07/14 14:56	
EPA 6010	Zinc	113	mg/kg	14.1	03/07/14 14:56	
EPA 7471	Mercury	0.080	mg/kg	0.022	03/14/14 10:02	
ASTM D2974-87	Percent Moisture	74.9	%	0.10	03/06/14 13:54	
EPA 350.1	Nitrogen, Ammonia	771	mg/kg	59.7	03/11/14 21:35	
EPA 351.2	Nitrogen, Kjeldahl, Total	9050	mg/kg	1890	03/10/14 21:57	
EPA 365.4	Phosphorus	1520	mg/kg	106	03/10/14 13:04	
EPA 9060 Modified	RPD%	13.3	%	0.10	03/17/14 10:03	
EPA 9060 Modified	Total Organic Carbon	60800	mg/kg	12500	03/17/14 10:00	
EPA 9060 Modified	Total Organic Carbon	53200	mg/kg	10000	03/17/14 10:03	
EPA 9060 Modified	Mean Total Organic Carbon	57000	mg/kg	11200	03/17/14 10:03	
4092914006	**HA-6 (1-2')**					
EPA 6010	Arsenic	6.5	mg/kg	5.8	03/07/14 14:58	
EPA 6010	Cadmium	1.0J	mg/kg	1.4	03/07/14 14:58	B
EPA 6010	Chromium	31.7	mg/kg	1.4	03/07/14 14:58	
EPA 6010	Copper	25.4	mg/kg	2.9	03/07/14 14:58	
EPA 6010	Lead	21.3	mg/kg	0.029	03/07/14 14:58	
EPA 6010	Nickel	25.3	mg/kg	2.9	03/07/14 14:58	
EPA 6010	Zinc	90.1	mg/kg	11.6	03/07/14 14:58	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
4092914006	**HA-6 (1-2')**					
EPA 7471	Mercury	0.096	mg/kg	0.019	03/14/14 10:04	
ASTM D2974-87	Percent Moisture	68.0	%	0.10	03/06/14 13:54	
EPA 350.1	Nitrogen, Ammonia	533	mg/kg	46.9	03/11/14 21:36	
EPA 351.2	Nitrogen, Kjeldahl, Total	5390	mg/kg	1360	03/10/14 21:58	
EPA 365.4	Phosphorus	1030	mg/kg	96.2	03/10/14 13:05	
EPA 9060 Modified	RPD%	23.3	%	0.10	03/17/14 10:36	
EPA 9060 Modified	Total Organic Carbon	39000	mg/kg	10000	03/17/14 10:30	
EPA 9060 Modified	Total Organic Carbon	49300	mg/kg	12500	03/17/14 10:36	
EPA 9060 Modified	Mean Total Organic Carbon	44100	mg/kg	11200	03/17/14 10:36	

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ANALYTICAL RESULTS

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

Sample: HA-1 (1-2') **Lab ID: 4092914001** Collected: 03/04/14 10:15 Received: 03/06/14 07:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3541								
PCB-1016 (Aroclor 1016)	**<85.9**	ug/kg	172	85.9	1	03/07/14 13:08	03/10/14 11:02	12674-11-2	
PCB-1221 (Aroclor 1221)	**<85.9**	ug/kg	172	85.9	1	03/07/14 13:08	03/10/14 11:02	11104-28-2	
PCB-1232 (Aroclor 1232)	**<85.9**	ug/kg	172	85.9	1	03/07/14 13:08	03/10/14 11:02	11141-16-5	
PCB-1242 (Aroclor 1242)	**<85.9**	ug/kg	172	85.9	1	03/07/14 13:08	03/10/14 11:02	53469-21-9	
PCB-1248 (Aroclor 1248)	**<85.9**	ug/kg	172	85.9	1	03/07/14 13:08	03/10/14 11:02	12672-29-6	
PCB-1254 (Aroclor 1254)	**<85.9**	ug/kg	172	85.9	1	03/07/14 13:08	03/10/14 11:02	11097-69-1	
PCB-1260 (Aroclor 1260)	**<85.9**	ug/kg	172	85.9	1	03/07/14 13:08	03/10/14 11:02	11096-82-5	
PCB, Total	**<85.9**	ug/kg	172	85.9	1	03/07/14 13:08	03/10/14 11:02	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	83	%	50-130		1	03/07/14 13:08	03/10/14 11:02	877-09-8	
Decachlorobiphenyl (S)	76	%	18-134		1	03/07/14 13:08	03/10/14 11:02	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	**9.7**	mg/kg	6.3	1.7	1	03/07/14 08:01	03/07/14 14:43	7440-38-2	
Cadmium	**0.82J**	mg/kg	1.6	0.16	1	03/07/14 08:01	03/07/14 14:43	7440-43-9	B
Chromium	**30.0**	mg/kg	1.6	0.39	1	03/07/14 08:01	03/07/14 14:43	7440-47-3	
Copper	**25.1**	mg/kg	3.1	0.51	1	03/07/14 08:01	03/07/14 14:43	7440-50-8	
Lead	**23.1**	mg/kg	0.031	0.0092	1	03/07/14 08:01	03/07/14 14:43	7439-92-1	
Nickel	**27.4**	mg/kg	3.1	0.33	1	03/07/14 08:01	03/07/14 14:43	7440-02-0	
Selenium	**<1.9**	mg/kg	6.3	1.9	1	03/07/14 08:01	03/07/14 14:43	7782-49-2	
Zinc	**95.3**	mg/kg	12.6	0.84	1	03/07/14 08:01	03/07/14 14:43	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	**0.096**	mg/kg	0.020	0.010	1	03/13/14 12:11	03/14/14 09:50	7439-97-6	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**70.9**	%	0.10	0.10	1		03/06/14 13:53		
300.0 IC Anions	Analytical Method: EPA 300.0 Preparation Method: EPA 300.0								
Nitrate as N	**<5.1**	mg/kg	10.3	5.1	1	03/12/14 12:56	03/13/14 14:46	14797-55-8	
Nitrite as N	**<3.4**	mg/kg	6.8	3.4	1	03/12/14 12:56	03/13/14 14:46	14797-65-0	
350.1 Ammonia	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1								
Nitrogen, Ammonia	**675**	mg/kg	49.1	24.5	1	03/06/14 19:34	03/06/14 20:30	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**7770**	mg/kg	1490	247	5	03/10/14 17:25	03/10/14 21:54	7727-37-9	
365.4 Total Phosphorus	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4								
Phosphorus	**1210**	mg/kg	94.8	47.4	1	03/10/14 09:05	03/10/14 13:01	7723-14-0	
Total Organic Carbon	Analytical Method: EPA 9060 Modified								
Surrogates									
RPD%	**20.8**	%	0.10	0.10	1		03/17/14 09:13		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

Sample: HA-1 (1-2') **Lab ID: 4092914001** Collected: 03/04/14 10:15 Received: 03/06/14 07:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Total Organic Carbon	Analytical Method: EPA 9060 Modified								
Total Organic Carbon	**39600**	mg/kg	25000	3110	1		03/17/14 09:01	7440-44-0	
Total Organic Carbon	**48800**	mg/kg	16700	2070	1		03/17/14 09:13	7440-44-0	
Mean Total Organic Carbon	**44200**	mg/kg	20800	2590	1		03/17/14 09:13	7440-44-0	M0

Sample: HA-2 (1-2') **Lab ID: 4092914002** Collected: 03/04/14 10:50 Received: 03/06/14 07:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3541								
PCB-1016 (Aroclor 1016)	**<73.3**	ug/kg	147	73.3	1	03/07/14 13:08	03/10/14 11:19	12674-11-2	
PCB-1221 (Aroclor 1221)	**<73.3**	ug/kg	147	73.3	1	03/07/14 13:08	03/10/14 11:19	11104-28-2	
PCB-1232 (Aroclor 1232)	**<73.3**	ug/kg	147	73.3	1	03/07/14 13:08	03/10/14 11:19	11141-16-5	
PCB-1242 (Aroclor 1242)	**<73.3**	ug/kg	147	73.3	1	03/07/14 13:08	03/10/14 11:19	53469-21-9	
PCB-1248 (Aroclor 1248)	**<73.3**	ug/kg	147	73.3	1	03/07/14 13:08	03/10/14 11:19	12672-29-6	
PCB-1254 (Aroclor 1254)	**<73.3**	ug/kg	147	73.3	1	03/07/14 13:08	03/10/14 11:19	11097-69-1	
PCB-1260 (Aroclor 1260)	**<73.3**	ug/kg	147	73.3	1	03/07/14 13:08	03/10/14 11:19	11096-82-5	
PCB, Total	**<73.3**	ug/kg	147	73.3	1	03/07/14 13:08	03/10/14 11:19	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	85	%	50-130		1	03/07/14 13:08	03/10/14 11:19	877-09-8	
Decachlorobiphenyl (S)	83	%	18-134		1	03/07/14 13:08	03/10/14 11:19	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	**8.2**	mg/kg	5.2	1.4	1	03/07/14 08:01	03/07/14 14:45	7440-38-2	
Cadmium	**1.8**	mg/kg	1.3	0.13	1	03/07/14 08:01	03/07/14 14:45	7440-43-9	
Chromium	**45.4**	mg/kg	1.3	0.32	1	03/07/14 08:01	03/07/14 14:45	7440-47-3	
Copper	**37.6**	mg/kg	2.6	0.42	1	03/07/14 08:01	03/07/14 14:45	7440-50-8	
Lead	**29.7**	mg/kg	0.026	0.0076	1	03/07/14 08:01	03/07/14 14:45	7439-92-1	
Nickel	**34.0**	mg/kg	2.6	0.27	1	03/07/14 08:01	03/07/14 14:45	7440-02-0	
Selenium	**<1.5**	mg/kg	5.2	1.5	1	03/07/14 08:01	03/07/14 14:45	7782-49-2	
Zinc	**121**	mg/kg	10.3	0.69	1	03/07/14 08:01	03/07/14 14:45	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	**0.10**	mg/kg	0.018	0.0090	1	03/13/14 12:11	03/14/14 09:52	7439-97-6	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**65.9**	%	0.10	0.10	1		03/06/14 13:54		
300.0 IC Anions	Analytical Method: EPA 300.0 Preparation Method: EPA 300.0								
Nitrate as N	**<4.4**	mg/kg	8.9	4.4	1	03/12/14 12:56	03/13/14 14:54	14797-55-8	
Nitrite as N	**<3.0**	mg/kg	5.9	3.0	1	03/12/14 12:56	03/13/14 14:54	14797-65-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

Sample: HA-2 (1-2') **Lab ID: 4092914002** Collected: 03/04/14 10:50 Received: 03/06/14 07:45 Matrix: Solid
Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
350.1 Ammonia	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1								
Nitrogen, Ammonia	**542**	mg/kg	44.0	22.0	1	03/06/14 19:34	03/06/14 20:31	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**5250**	mg/kg	1130	186	5	03/10/14 17:25	03/10/14 21:55	7727-37-9	
365.4 Total Phosphorus	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4								
Phosphorus	**1140**	mg/kg	90.2	45.1	1	03/10/14 09:05	03/10/14 13:01	7723-14-0	
Total Organic Carbon	Analytical Method: EPA 9060 Modified								
Surrogates									
RPD%	**0.94**	%	0.10	0.10	1		03/17/14 09:38		
Total Organic Carbon	**43200**	mg/kg	10000	1240	1		03/17/14 09:35	7440-44-0	
Total Organic Carbon	**42800**	mg/kg	10000	1240	1		03/17/14 09:38	7440-44-0	
Mean Total Organic Carbon	**43000**	mg/kg	10000	1240	1		03/17/14 09:38	7440-44-0	

Sample: HA-3 (3-4') **Lab ID: 4092914003** Collected: 03/04/14 12:15 Received: 03/06/14 07:45 Matrix: Solid
Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3541								
PCB-1016 (Aroclor 1016)	**<90.0**	ug/kg	180	90.0	1	03/07/14 13:08	03/10/14 11:37	12674-11-2	
PCB-1221 (Aroclor 1221)	**<90.0**	ug/kg	180	90.0	1	03/07/14 13:08	03/10/14 11:37	11104-28-2	
PCB-1232 (Aroclor 1232)	**<90.0**	ug/kg	180	90.0	1	03/07/14 13:08	03/10/14 11:37	11141-16-5	
PCB-1242 (Aroclor 1242)	**<90.0**	ug/kg	180	90.0	1	03/07/14 13:08	03/10/14 11:37	53469-21-9	
PCB-1248 (Aroclor 1248)	**<90.0**	ug/kg	180	90.0	1	03/07/14 13:08	03/10/14 11:37	12672-29-6	
PCB-1254 (Aroclor 1254)	**<90.0**	ug/kg	180	90.0	1	03/07/14 13:08	03/10/14 11:37	11097-69-1	
PCB-1260 (Aroclor 1260)	**<90.0**	ug/kg	180	90.0	1	03/07/14 13:08	03/10/14 11:37	11096-82-5	
PCB, Total	**<90.0**	ug/kg	180	90.0	1	03/07/14 13:08	03/10/14 11:37	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	83	%	50-130		1	03/07/14 13:08	03/10/14 11:37	877-09-8	
Decachlorobiphenyl (S)	80	%	18-134		1	03/07/14 13:08	03/10/14 11:37	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	**8.1**	mg/kg	6.1	1.7	1	03/07/14 08:01	03/07/14 14:52	7440-38-2	
Cadmium	**1.3J**	mg/kg	1.5	0.16	1	03/07/14 08:01	03/07/14 14:52	7440-43-9	B
Chromium	**40.1**	mg/kg	1.5	0.38	1	03/07/14 08:01	03/07/14 14:52	7440-47-3	
Copper	**30.3**	mg/kg	3.1	0.50	1	03/07/14 08:01	03/07/14 14:52	7440-50-8	
Lead	**23.5**	mg/kg	0.031	0.0090	1	03/07/14 08:01	03/07/14 14:52	7439-92-1	
Nickel	**31.5**	mg/kg	3.1	0.32	1	03/07/14 08:01	03/07/14 14:52	7440-02-0	
Selenium	**<1.8**	mg/kg	6.1	1.8	1	03/07/14 08:01	03/07/14 14:52	7782-49-2	
Zinc	**107**	mg/kg	12.3	0.82	1	03/07/14 08:01	03/07/14 14:52	7440-66-6	

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ANALYTICAL RESULTS

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

Sample: HA-3 (3-4') **Lab ID: 4092914003** Collected: 03/04/14 12:15 Received: 03/06/14 07:45 Matrix: Solid
Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	**0.063**	mg/kg	0.020	0.0099	1	03/13/14 12:11	03/14/14 09:54	7439-97-6	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**72.2**	%	0.10	0.10	1		03/06/14 13:54		
300.0 IC Anions	Analytical Method: EPA 300.0 Preparation Method: EPA 300.0								
Nitrate as N	**<5.4**	mg/kg	10.9	5.4	1	03/12/14 12:56	03/13/14 15:02	14797-55-8	
Nitrite as N	**<3.6**	mg/kg	7.3	3.6	1	03/12/14 12:56	03/13/14 15:02	14797-65-0	
350.1 Ammonia	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1								
Nitrogen, Ammonia	**602**	mg/kg	45.0	22.5	1	03/06/14 19:34	03/06/14 20:33	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**7730**	mg/kg	1500	248	5	03/10/14 17:25	03/10/14 21:56	7727-37-9	
365.4 Total Phosphorus	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4								
Phosphorus	**1010**	mg/kg	115	57.6	1	03/10/14 09:05	03/10/14 13:02	7723-14-0	
Total Organic Carbon	Analytical Method: EPA 9060 Modified								
Surrogates									
RPD%	**6.9**	%	0.10	0.10	1		03/17/14 09:49		
Total Organic Carbon	**49600**	mg/kg	10000	1240	1		03/17/14 09:45	7440-44-0	
Total Organic Carbon	**46300**	mg/kg	9090	1130	1		03/17/14 09:49	7440-44-0	
Mean Total Organic Carbon	**47900**	mg/kg	9550	1190	1		03/17/14 09:49	7440-44-0	

Sample: HA-4 (3-4') **Lab ID: 4092914004** Collected: 03/04/14 13:25 Received: 03/06/14 07:45 Matrix: Solid
Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3541								
PCB-1016 (Aroclor 1016)	**<80.9**	ug/kg	162	80.9	1	03/07/14 13:08	03/10/14 11:55	12674-11-2	
PCB-1221 (Aroclor 1221)	**<80.9**	ug/kg	162	80.9	1	03/07/14 13:08	03/10/14 11:55	11104-28-2	
PCB-1232 (Aroclor 1232)	**<80.9**	ug/kg	162	80.9	1	03/07/14 13:08	03/10/14 11:55	11141-16-5	
PCB-1242 (Aroclor 1242)	**<80.9**	ug/kg	162	80.9	1	03/07/14 13:08	03/10/14 11:55	53469-21-9	
PCB-1248 (Aroclor 1248)	**<80.9**	ug/kg	162	80.9	1	03/07/14 13:08	03/10/14 11:55	12672-29-6	
PCB-1254 (Aroclor 1254)	**<80.9**	ug/kg	162	80.9	1	03/07/14 13:08	03/10/14 11:55	11097-69-1	
PCB-1260 (Aroclor 1260)	**<80.9**	ug/kg	162	80.9	1	03/07/14 13:08	03/10/14 11:55	11096-82-5	
PCB, Total	**<80.9**	ug/kg	162	80.9	1	03/07/14 13:08	03/10/14 11:55	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	85	%	50-130		1	03/07/14 13:08	03/10/14 11:55	877-09-8	
Decachlorobiphenyl (S)	84	%	18-134		1	03/07/14 13:08	03/10/14 11:55	2051-24-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

Sample: HA-4 (3-4') **Lab ID: 4092914004** Collected: 03/04/14 13:25 Received: 03/06/14 07:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	**10.8**	mg/kg	6.1	1.7	1	03/07/14 08:01	03/07/14 14:54	7440-38-2	
Cadmium	**1.0J**	mg/kg	1.5	0.16	1	03/07/14 08:01	03/07/14 14:54	7440-43-9	B
Chromium	**32.7**	mg/kg	1.5	0.38	1	03/07/14 08:01	03/07/14 14:54	7440-47-3	
Copper	**25.7**	mg/kg	3.1	0.49	1	03/07/14 08:01	03/07/14 14:54	7440-50-8	
Lead	**21.5**	mg/kg	0.031	0.0089	1	03/07/14 08:01	03/07/14 14:54	7439-92-1	
Nickel	**27.8**	mg/kg	3.1	0.32	1	03/07/14 08:01	03/07/14 14:54	7440-02-0	
Selenium	**<1.8**	mg/kg	6.1	1.8	1	03/07/14 08:01	03/07/14 14:54	7782-49-2	
Zinc	**94.8**	mg/kg	12.2	0.82	1	03/07/14 08:01	03/07/14 14:54	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	**0.10**	mg/kg	0.021	0.011	1	03/13/14 12:11	03/14/14 09:56	7439-97-6	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**69.1**	%	0.10	0.10	1		03/06/14 13:54		
300.0 IC Anions	Analytical Method: EPA 300.0 Preparation Method: EPA 300.0								
Nitrate as N	**<4.9**	mg/kg	9.7	4.9	1	03/12/14 12:56	03/13/14 15:10	14797-55-8	
Nitrite as N	**<3.2**	mg/kg	6.5	3.2	1	03/12/14 12:56	03/13/14 15:10	14797-65-0	
350.1 Ammonia	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1								
Nitrogen, Ammonia	**569**	mg/kg	37.3	18.7	1	03/06/14 19:34	03/06/14 20:34	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**9030**	mg/kg	1200	198	5	03/10/14 17:25	03/10/14 21:57	7727-37-9	
365.4 Total Phosphorus	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4								
Phosphorus	**988**	mg/kg	89.3	44.6	1	03/10/14 09:05	03/10/14 13:03	7723-14-0	
Total Organic Carbon	Analytical Method: EPA 9060 Modified								
Surrogates									
RPD%	**3.8**	%	0.10	0.10	1		03/17/14 09:56		
Total Organic Carbon	**58100**	mg/kg	10000	1240	1		03/17/14 09:52	7440-44-0	
Total Organic Carbon	**60300**	mg/kg	11100	1380	1		03/17/14 09:56	7440-44-0	
Mean Total Organic Carbon	**59200**	mg/kg	10600	1310	1		03/17/14 09:56	7440-44-0	

Sample: HA-5 (3-4') **Lab ID: 4092914005** Collected: 03/04/14 14:05 Received: 03/06/14 07:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3541								
PCB-1016 (Aroclor 1016)	**<99.4**	ug/kg	199	99.4	1	03/07/14 13:08	03/10/14 12:12	12674-11-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

Sample: HA-5 (3-4') **Lab ID: 4092914005** Collected: 03/04/14 14:05 Received: 03/06/14 07:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3541								
PCB-1221 (Aroclor 1221)	**<99.4**	ug/kg	199	99.4	1	03/07/14 13:08	03/10/14 12:12	11104-28-2	
PCB-1232 (Aroclor 1232)	**<99.4**	ug/kg	199	99.4	1	03/07/14 13:08	03/10/14 12:12	11141-16-5	
PCB-1242 (Aroclor 1242)	**<99.4**	ug/kg	199	99.4	1	03/07/14 13:08	03/10/14 12:12	53469-21-9	
PCB-1248 (Aroclor 1248)	**<99.4**	ug/kg	199	99.4	1	03/07/14 13:08	03/10/14 12:12	12672-29-6	
PCB-1254 (Aroclor 1254)	**<99.4**	ug/kg	199	99.4	1	03/07/14 13:08	03/10/14 12:12	11097-69-1	
PCB-1260 (Aroclor 1260)	**<99.4**	ug/kg	199	99.4	1	03/07/14 13:08	03/10/14 12:12	11096-82-5	
PCB, Total	**<99.4**	ug/kg	199	99.4	1	03/07/14 13:08	03/10/14 12:12	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	91	%	50-130		1	03/07/14 13:08	03/10/14 12:12	877-09-8	
Decachlorobiphenyl (S)	89	%	18-134		1	03/07/14 13:08	03/10/14 12:12	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	**11.7**	mg/kg	7.1	1.9	1	03/07/14 08:01	03/07/14 14:56	7440-38-2	
Cadmium	**1.1J**	mg/kg	1.8	0.18	1	03/07/14 08:01	03/07/14 14:56	7440-43-9	B
Chromium	**38.2**	mg/kg	1.8	0.44	1	03/07/14 08:01	03/07/14 14:56	7440-47-3	
Copper	**30.8**	mg/kg	3.5	0.57	1	03/07/14 08:01	03/07/14 14:56	7440-50-8	
Lead	**26.8**	mg/kg	0.035	0.010	1	03/07/14 08:01	03/07/14 14:56	7439-92-1	
Nickel	**33.7**	mg/kg	3.5	0.37	1	03/07/14 08:01	03/07/14 14:56	7440-02-0	
Selenium	**<2.1**	mg/kg	7.1	2.1	1	03/07/14 08:01	03/07/14 14:56	7782-49-2	
Zinc	**113**	mg/kg	14.1	0.94	1	03/07/14 08:01	03/07/14 14:56	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	**0.080**	mg/kg	0.022	0.011	1	03/13/14 12:11	03/14/14 10:02	7439-97-6	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**74.9**	%	0.10	0.10	1		03/06/14 13:54		
300.0 IC Anions	Analytical Method: EPA 300.0 Preparation Method: EPA 300.0								
Nitrate as N	**<6.0**	mg/kg	11.9	6.0	1	03/12/14 12:56	03/13/14 15:19	14797-55-8	
Nitrite as N	**<4.0**	mg/kg	8.0	4.0	1	03/12/14 12:56	03/13/14 15:19	14797-65-0	
350.1 Ammonia	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1								
Nitrogen, Ammonia	**771**	mg/kg	59.7	29.8	1	03/11/14 20:30	03/11/14 21:35	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**9050**	mg/kg	1890	313	5	03/10/14 17:25	03/10/14 21:57	7727-37-9	
365.4 Total Phosphorus	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4								
Phosphorus	**1520**	mg/kg	106	53.0	1	03/10/14 09:05	03/10/14 13:04	7723-14-0	
Total Organic Carbon	Analytical Method: EPA 9060 Modified								
Surrogates									
RPD%	**13.3**	%	0.10	0.10	1		03/17/14 10:03		
Total Organic Carbon	**60800**	mg/kg	12500	1550	1		03/17/14 10:00	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

Sample: HA-5 (3-4') **Lab ID: 4092914005** Collected: 03/04/14 14:05 Received: 03/06/14 07:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Total Organic Carbon	Analytical Method: EPA 9060 Modified								
Total Organic Carbon	**53200**	mg/kg	10000	1240	1		03/17/14 10:03	7440-44-0	
Mean Total Organic Carbon	**57000**	mg/kg	11200	1400	1		03/17/14 10:03	7440-44-0	

Sample: HA-6 (1-2') **Lab ID: 4092914006** Collected: 03/04/14 14:50 Received: 03/06/14 07:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3541								
PCB-1016 (Aroclor 1016)	**<78.2**	ug/kg	156	78.2	1	03/07/14 13:08	03/10/14 12:30	12674-11-2	
PCB-1221 (Aroclor 1221)	**<78.2**	ug/kg	156	78.2	1	03/07/14 13:08	03/10/14 12:30	11104-28-2	
PCB-1232 (Aroclor 1232)	**<78.2**	ug/kg	156	78.2	1	03/07/14 13:08	03/10/14 12:30	11141-16-5	
PCB-1242 (Aroclor 1242)	**<78.2**	ug/kg	156	78.2	1	03/07/14 13:08	03/10/14 12:30	53469-21-9	
PCB-1248 (Aroclor 1248)	**<78.2**	ug/kg	156	78.2	1	03/07/14 13:08	03/10/14 12:30	12672-29-6	
PCB-1254 (Aroclor 1254)	**<78.2**	ug/kg	156	78.2	1	03/07/14 13:08	03/10/14 12:30	11097-69-1	
PCB-1260 (Aroclor 1260)	**<78.2**	ug/kg	156	78.2	1	03/07/14 13:08	03/10/14 12:30	11096-82-5	
PCB, Total	**<78.2**	ug/kg	156	78.2	1	03/07/14 13:08	03/10/14 12:30	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	90	%	50-130		1	03/07/14 13:08	03/10/14 12:30	877-09-8	
Decachlorobiphenyl (S)	92	%	18-134		1	03/07/14 13:08	03/10/14 12:30	2051-24-3	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	**6.5**	mg/kg	5.8	1.6	1	03/07/14 08:01	03/07/14 14:58	7440-38-2	
Cadmium	**1.0J**	mg/kg	1.4	0.15	1	03/07/14 08:01	03/07/14 14:58	7440-43-9	B
Chromium	**31.7**	mg/kg	1.4	0.36	1	03/07/14 08:01	03/07/14 14:58	7440-47-3	
Copper	**25.4**	mg/kg	2.9	0.47	1	03/07/14 08:01	03/07/14 14:58	7440-50-8	
Lead	**21.3**	mg/kg	0.029	0.0085	1	03/07/14 08:01	03/07/14 14:58	7439-92-1	
Nickel	**25.3**	mg/kg	2.9	0.31	1	03/07/14 08:01	03/07/14 14:58	7440-02-0	
Selenium	**<1.7**	mg/kg	5.8	1.7	1	03/07/14 08:01	03/07/14 14:58	7782-49-2	
Zinc	**90.1**	mg/kg	11.6	0.77	1	03/07/14 08:01	03/07/14 14:58	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	**0.096**	mg/kg	0.019	0.0095	1	03/13/14 12:11	03/14/14 10:04	7439-97-6	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**68.0**	%	0.10	0.10	1		03/06/14 13:54		
300.0 IC Anions	Analytical Method: EPA 300.0 Preparation Method: EPA 300.0								
Nitrate as N	**<4.7**	mg/kg	9.4	4.7	1	03/12/14 12:56	03/13/14 15:27	14797-55-8	
Nitrite as N	**<3.1**	mg/kg	6.3	3.1	1	03/12/14 12:56	03/13/14 15:27	14797-65-0	
350.1 Ammonia	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1								
Nitrogen, Ammonia	**533**	mg/kg	46.9	23.4	1	03/11/14 20:30	03/11/14 21:36	7664-41-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

Sample: HA-6 (1-2') **Lab ID: 4092914006** Collected: 03/04/14 14:50 Received: 03/06/14 07:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**5390**	mg/kg	1360	225	5	03/10/14 17:25	03/10/14 21:58	7727-37-9	
365.4 Total Phosphorus	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4								
Phosphorus	**1030**	mg/kg	96.2	48.1	1	03/10/14 09:05	03/10/14 13:05	7723-14-0	
Total Organic Carbon	Analytical Method: EPA 9060 Modified								
Surrogates									
RPD%	**23.3**	%	0.10	0.10	1		03/17/14 10:36		
Total Organic Carbon	**39000**	mg/kg	10000	1240	1		03/17/14 10:30	7440-44-0	
Total Organic Carbon	**49300**	mg/kg	12500	1550	1		03/17/14 10:36	7440-44-0	
Mean Total Organic Carbon	**44100**	mg/kg	11200	1400	1		03/17/14 10:36	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

QC Batch: MERP/4146 Analysis Method: EPA 7471
QC Batch Method: EPA 7471 Analysis Description: 7471 Mercury
Associated Lab Samples: 4092914001, 4092914002, 4092914003, 4092914004, 4092914005, 4092914006

METHOD BLANK: 940694 Matrix: Solid
Associated Lab Samples: 4092914001, 4092914002, 4092914003, 4092914004, 4092914005, 4092914006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	<0.0033	0.0067	03/14/14 09:13	

LABORATORY CONTROL SAMPLE: 940695

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.17	0.17	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 940696 940697

Parameter	Units	4093100001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	0.029	.22	.22	0.23	0.23	95	96	85-115	2	20	

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QUALITY CONTROL DATA

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

QC Batch: MPRP/9914 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 4092914001, 4092914002, 4092914003, 4092914004, 4092914005, 4092914006

METHOD BLANK: 938541 Matrix: Solid
Associated Lab Samples: 4092914001, 4092914002, 4092914003, 4092914004, 4092914005, 4092914006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	<0.54	2.0	03/07/14 14:00	
Cadmium	mg/kg	0.053J	0.50	03/07/14 14:00	
Chromium	mg/kg	<0.13	0.50	03/07/14 14:00	
Copper	mg/kg	<0.16	1.0	03/07/14 14:00	
Lead	mg/kg	<0.0029	0.010	03/07/14 14:00	
Nickel	mg/kg	<0.11	1.0	03/07/14 14:00	
Selenium	mg/kg	<0.59	2.0	03/07/14 14:00	
Zinc	mg/kg	<0.27	4.0	03/07/14 14:00	

LABORATORY CONTROL SAMPLE: 938542

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	50	49.3	99	80-120	
Cadmium	mg/kg	50	49.6	99	80-120	
Chromium	mg/kg	50	50.1	100	80-120	
Copper	mg/kg	50	49.4	99	80-120	
Lead	mg/kg	50	49.4	99	80-120	
Nickel	mg/kg	50	50.4	101	80-120	
Selenium	mg/kg	50	48.7	97	80-120	
Zinc	mg/kg	50	50.5	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 938543 938544

Parameter	Units	4092924009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	3.2	56.1	56.2	56.0	56.4	94	95	75-125	1	20	
Cadmium	mg/kg	0.22J	56.1	56.2	55.0	55.1	98	98	75-125	0	20	
Chromium	mg/kg	12.5	56.1	56.2	67.9	67.4	99	98	75-125	1	20	
Copper	mg/kg	10.0	56.1	56.2	65.3	63.6	99	95	75-125	3	20	
Lead	mg/kg	4.9	56.1	56.2	61.4	60.8	101	99	75-125	1	20	
Nickel	mg/kg	13.4	56.1	56.2	69.4	69.3	100	99	75-125	0	20	
Selenium	mg/kg	<0.67	56.1	56.2	52.7	53.0	94	94	75-125	1	20	
Zinc	mg/kg	29.3	56.1	56.2	102	92.5	130	112	75-125	10	20	M0

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

QC Batch: OEXT/21537 Analysis Method: EPA 8082
QC Batch Method: EPA 3541 Analysis Description: 8082 GCS PCB
Associated Lab Samples: 4092914001, 4092914002, 4092914003, 4092914004, 4092914005, 4092914006

METHOD BLANK: 938824 Matrix: Solid
Associated Lab Samples: 4092914001, 4092914002, 4092914003, 4092914004, 4092914005, 4092914006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<25.0	50.0	03/10/14 09:16	
PCB-1221 (Aroclor 1221)	ug/kg	<25.0	50.0	03/10/14 09:16	
PCB-1232 (Aroclor 1232)	ug/kg	<25.0	50.0	03/10/14 09:16	
PCB-1242 (Aroclor 1242)	ug/kg	<25.0	50.0	03/10/14 09:16	
PCB-1248 (Aroclor 1248)	ug/kg	<25.0	50.0	03/10/14 09:16	
PCB-1254 (Aroclor 1254)	ug/kg	<25.0	50.0	03/10/14 09:16	
PCB-1260 (Aroclor 1260)	ug/kg	<25.0	50.0	03/10/14 09:16	
Decachlorobiphenyl (S)	%	119	18-134	03/10/14 09:16	
Tetrachloro-m-xylene (S)	%	78	50-130	03/10/14 09:16	

LABORATORY CONTROL SAMPLE: 938825

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<25.0			
PCB-1221 (Aroclor 1221)	ug/kg		<25.0			
PCB-1232 (Aroclor 1232)	ug/kg		<25.0			
PCB-1242 (Aroclor 1242)	ug/kg		<25.0			
PCB-1248 (Aroclor 1248)	ug/kg		<25.0			
PCB-1254 (Aroclor 1254)	ug/kg		<25.0			
PCB-1260 (Aroclor 1260)	ug/kg	500	428	86	64-130	
Decachlorobiphenyl (S)	%			112	18-134	
Tetrachloro-m-xylene (S)	%			87	50-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 938826 938827

Parameter	Units	4092914002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	<73.3			<73.3	<73.3					50	
PCB-1221 (Aroclor 1221)	ug/kg	<73.3			<73.3	<73.3					50	
PCB-1232 (Aroclor 1232)	ug/kg	<73.3			<73.3	<73.3					50	
PCB-1242 (Aroclor 1242)	ug/kg	<73.3			<73.3	<73.3					50	
PCB-1248 (Aroclor 1248)	ug/kg	<73.3			<73.3	<73.3					50	
PCB-1254 (Aroclor 1254)	ug/kg	<73.3			<73.3	<73.3					50	
PCB-1260 (Aroclor 1260)	ug/kg	<73.3	1470	1470	1060	1060	72	72	28-130	0	50	
Decachlorobiphenyl (S)	%						89	88	18-134			
Tetrachloro-m-xylene (S)	%						89	88	50-130			

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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(920)469-2436

QUALITY CONTROL DATA

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

QC Batch: PMST/9478 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 4092914001, 4092914002, 4092914003, 4092914004, 4092914005, 4092914006

SAMPLE DUPLICATE: 938404

Parameter	Units	4092889003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	15.9	15.9	0	10	

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QUALITY CONTROL DATA

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

QC Batch: WETA/22180 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 4092914001, 4092914002, 4092914003, 4092914004, 4092914005, 4092914006

METHOD BLANK: 940123 Matrix: Solid
Associated Lab Samples: 4092914001, 4092914002, 4092914003, 4092914004, 4092914005, 4092914006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrate as N	mg/kg	<1.5	3.0	03/13/14 15:51	
Nitrite as N	mg/kg	<1.0	2.0	03/13/14 15:51	

LABORATORY CONTROL SAMPLE: 940124

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/kg	20	19.2	96	80-120	
Nitrite as N	mg/kg	10	10.7	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 940125 940126

Parameter	Units	4092914001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/kg	<5.1	68.4	68.4	66.8	67.1	98	98	80-120	1	20	
Nitrite as N	mg/kg	<3.4	34.4	34.4	37.0	36.6	108	107	80-120	1	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

QC Batch: WETA/22115 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 4092914001, 4092914002, 4092914003, 4092914004

METHOD BLANK: 938467 Matrix: Solid
Associated Lab Samples: 4092914001, 4092914002, 4092914003, 4092914004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/kg	<7.5	15.0	03/06/14 20:23	

LABORATORY CONTROL SAMPLE: 938468

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/kg	300	322	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 938469 938470

Parameter	Units	4092914004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/kg	569	718	748	1240	1350	94	104	80-120	8	20	

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QUALITY CONTROL DATA

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

QC Batch: WETA/22149 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 4092914005, 4092914006

METHOD BLANK: 939464 Matrix: Solid
Associated Lab Samples: 4092914005, 4092914006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/kg	<7.5	15.0	03/11/14 21:33	

LABORATORY CONTROL SAMPLE: 939465

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/kg	300	312	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 939466 939467

Parameter	Units	4092918001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/kg	<47.3	1890	2080	2030	2300	106	109	80-120	12	20	

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QUALITY CONTROL DATA

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

QC Batch: WETA/22143 Analysis Method: EPA 351.2
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN
Associated Lab Samples: 4092914001, 4092914002, 4092914003, 4092914004, 4092914005, 4092914006

METHOD BLANK: 939434 Matrix: Solid
Associated Lab Samples: 4092914001, 4092914002, 4092914003, 4092914004, 4092914005, 4092914006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	18.2J	100	03/10/14 21:01	

LABORATORY CONTROL SAMPLE: 939435

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	500	497	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 939436 939437

Parameter	Units	4092629001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/kg	13300	1440	1440	13000	12900	-20	-31	80-120	1	20	P6

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QUALITY CONTROL DATA

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

QC Batch: WETA/22133 Analysis Method: EPA 365.4
QC Batch Method: EPA 365.4 Analysis Description: 365.4 Total Phosphorus
Associated Lab Samples: 4092914001, 4092914002, 4092914003, 4092914004, 4092914005, 4092914006

METHOD BLANK: 939217 Matrix: Solid
Associated Lab Samples: 4092914001, 4092914002, 4092914003, 4092914004, 4092914005, 4092914006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/kg	<20.0	40.0	03/10/14 13:00	

LABORATORY CONTROL SAMPLE: 939218

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/kg	500	531	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 939219 939220

Parameter	Units	4092914006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/kg	1030	1200	1200	2260	2270	103	104	80-120	1	20	

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QUALITY CONTROL DATA

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

QC Batch: WETA/22216 Analysis Method: EPA 9060 Modified
QC Batch Method: EPA 9060 Modified Analysis Description: 9060 TOC Average
Associated Lab Samples: 4092914001, 4092914002, 4092914003, 4092914004, 4092914005, 4092914006

METHOD BLANK: 941995 Matrix: Solid
Associated Lab Samples: 4092914001, 4092914002, 4092914003, 4092914004, 4092914005, 4092914006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mean Total Organic Carbon	mg/kg	<31.1	250	03/17/14 08:37	

LABORATORY CONTROL SAMPLE: 941996

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mean Total Organic Carbon	mg/kg	1000	980	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 941997 941998

Parameter	Units	4092914001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mean Total Organic Carbon	mg/kg	44200	36700	34300	86900	99300	116	160	50-150	13	30	M0

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PRL - Pace Reporting Limit.
RL - Reporting Limit.
S - Surrogate
1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

WORKORDER QUALIFIERS

WO: 4092914
[1] Revised report, added Se adn Zn to original 4/2/14

SAMPLE QUALIFIERS

Sample: 4092914001
[1] Tri Cr result - <89.6mg/kg-dry
Sample: 4092914002
[1] Tri Cr result - <68.7 mg/kg-dry
Sample: 4092914003
[1] Tri Cr result - <56.4 mg/kg-dry
Sample: 4092914004
[1] Tri Cr result - <98 mg/kg-dry
Sample: 4092914005
[1] Tri Cr result - <89.6 mg/kg-dry
Sample: 4092914006
[1] Tri Cr result - <78.4 mg/kg-dry

BATCH QUALIFIERS

Batch: WETA/22216
[WB] Results reported on dry weight basis per cited method.

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QUALIFIERS

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

BATCH QUALIFIERS

Batch: WETA/22217

[WB] Results reported on dry weight basis per cited method.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4092914001	HA-1 (1-2')	EPA 3541	OEXT/21537	EPA 8082	GCSV/10968
4092914002	HA-2 (1-2')	EPA 3541	OEXT/21537	EPA 8082	GCSV/10968
4092914003	HA-3 (3-4')	EPA 3541	OEXT/21537	EPA 8082	GCSV/10968
4092914004	HA-4 (3-4')	EPA 3541	OEXT/21537	EPA 8082	GCSV/10968
4092914005	HA-5 (3-4')	EPA 3541	OEXT/21537	EPA 8082	GCSV/10968
4092914006	HA-6 (1-2')	EPA 3541	OEXT/21537	EPA 8082	GCSV/10968
4092914001	HA-1 (1-2')	EPA 3050	MPRP/9914	EPA 6010	ICP/8719
4092914002	HA-2 (1-2')	EPA 3050	MPRP/9914	EPA 6010	ICP/8719
4092914003	HA-3 (3-4')	EPA 3050	MPRP/9914	EPA 6010	ICP/8719
4092914004	HA-4 (3-4')	EPA 3050	MPRP/9914	EPA 6010	ICP/8719
4092914005	HA-5 (3-4')	EPA 3050	MPRP/9914	EPA 6010	ICP/8719
4092914006	HA-6 (1-2')	EPA 3050	MPRP/9914	EPA 6010	ICP/8719
4092914001	HA-1 (1-2')	EPA 7471	MERP/4146	EPA 7471	MERC/5414
4092914002	HA-2 (1-2')	EPA 7471	MERP/4146	EPA 7471	MERC/5414
4092914003	HA-3 (3-4')	EPA 7471	MERP/4146	EPA 7471	MERC/5414
4092914004	HA-4 (3-4')	EPA 7471	MERP/4146	EPA 7471	MERC/5414
4092914005	HA-5 (3-4')	EPA 7471	MERP/4146	EPA 7471	MERC/5414
4092914006	HA-6 (1-2')	EPA 7471	MERP/4146	EPA 7471	MERC/5414
4092914001	HA-1 (1-2')	ASTM D2974-87	PMST/9478		
4092914002	HA-2 (1-2')	ASTM D2974-87	PMST/9478		
4092914003	HA-3 (3-4')	ASTM D2974-87	PMST/9478		
4092914004	HA-4 (3-4')	ASTM D2974-87	PMST/9478		
4092914005	HA-5 (3-4')	ASTM D2974-87	PMST/9478		
4092914006	HA-6 (1-2')	ASTM D2974-87	PMST/9478		
4092914001	HA-1 (1-2')	EPA 300.0	WETA/22180	EPA 300.0	WETA/22190
4092914002	HA-2 (1-2')	EPA 300.0	WETA/22180	EPA 300.0	WETA/22190
4092914003	HA-3 (3-4')	EPA 300.0	WETA/22180	EPA 300.0	WETA/22190
4092914004	HA-4 (3-4')	EPA 300.0	WETA/22180	EPA 300.0	WETA/22190
4092914005	HA-5 (3-4')	EPA 300.0	WETA/22180	EPA 300.0	WETA/22190
4092914006	HA-6 (1-2')	EPA 300.0	WETA/22180	EPA 300.0	WETA/22190
4092914001	HA-1 (1-2')	EPA 350.1	WETA/22115	EPA 350.1	WETA/22118
4092914002	HA-2 (1-2')	EPA 350.1	WETA/22115	EPA 350.1	WETA/22118
4092914003	HA-3 (3-4')	EPA 350.1	WETA/22115	EPA 350.1	WETA/22118
4092914004	HA-4 (3-4')	EPA 350.1	WETA/22115	EPA 350.1	WETA/22118
4092914005	HA-5 (3-4')	EPA 350.1	WETA/22149	EPA 350.1	WETA/22173
4092914006	HA-6 (1-2')	EPA 350.1	WETA/22149	EPA 350.1	WETA/22173
4092914001	HA-1 (1-2')	EPA 351.2	WETA/22143	EPA 351.2	WETA/22156
4092914002	HA-2 (1-2')	EPA 351.2	WETA/22143	EPA 351.2	WETA/22156
4092914003	HA-3 (3-4')	EPA 351.2	WETA/22143	EPA 351.2	WETA/22156
4092914004	HA-4 (3-4')	EPA 351.2	WETA/22143	EPA 351.2	WETA/22156
4092914005	HA-5 (3-4')	EPA 351.2	WETA/22143	EPA 351.2	WETA/22156
4092914006	HA-6 (1-2')	EPA 351.2	WETA/22143	EPA 351.2	WETA/22156
4092914001	HA-1 (1-2')	EPA 365.4	WETA/22133	EPA 365.4	WETA/22135
4092914002	HA-2 (1-2')	EPA 365.4	WETA/22133	EPA 365.4	WETA/22135
4092914003	HA-3 (3-4')	EPA 365.4	WETA/22133	EPA 365.4	WETA/22135

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: LC-13-08064 WEAVER BOTTOMS SED
Pace Project No.: 4092914

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4092914004	HA-4 (3-4')	EPA 365.4	WETA/22133	EPA 365.4	WETA/22135
4092914005	HA-5 (3-4')	EPA 365.4	WETA/22133	EPA 365.4	WETA/22135
4092914006	HA-6 (1-2')	EPA 365.4	WETA/22133	EPA 365.4	WETA/22135
4092914001	HA-1 (1-2')	EPA 9060 Modified	WETA/22216		
4092914001	HA-1 (1-2')	EPA 9060 Modified	WETA/22217		
4092914002	HA-2 (1-2')	EPA 9060 Modified	WETA/22216		
4092914002	HA-2 (1-2')	EPA 9060 Modified	WETA/22217		
4092914003	HA-3 (3-4')	EPA 9060 Modified	WETA/22216		
4092914003	HA-3 (3-4')	EPA 9060 Modified	WETA/22217		
4092914004	HA-4 (3-4')	EPA 9060 Modified	WETA/22216		
4092914004	HA-4 (3-4')	EPA 9060 Modified	WETA/22217		
4092914005	HA-5 (3-4')	EPA 9060 Modified	WETA/22216		
4092914005	HA-5 (3-4')	EPA 9060 Modified	WETA/22217		
4092914006	HA-6 (1-2')	EPA 9060 Modified	WETA/22216		
4092914006	HA-6 (1-2')	EPA 9060 Modified	WETA/22217		

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

JBP

4092914

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CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)	
Company Name:	Braun Intertec
Branch/Location:	LaCrosse, WI
Project Contact:	John Wyciskalla
Phone:	608-781-7277
Project Number:	LC-13-08064
Project Name:	Weaver Bottoms Sediment Sampling
Project State:	MN
Sampled By (Print):	Kevin D. Nestingen
Sampled By (Sign):	
PO #:	Regulatory Program:

Quote #:	
Mail To Contact:	John Wyciskalla
Mail To Company:	Braun Intertec
Mail To Address:	2309 Palace St. LaCrosse, WI 54603
Invoice To Contact:	SAME
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes

A = Air	W = Water
B = Biota	DW = Drinking Water
C = Charcoal	GW = Ground Water
O = Oil	SW = Surface Water
S = Soil	WW = Waste Water
SI = Sludge	WP = Wipe

FILTERED? (YES/NO) — Y/N
PRESERVATION (CODE)* — Pick Letter

Analyses Requested: Metals (As, Cd, Cr (III), Cr (VI), Cu, Pb, Hg, Ni, Se, Zn); Total Phosphorus; Nitrate; Nitrite; Ammonia Nitrogen; TKN; PCBs; Total Organic Carbon

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED?	PRESERVATION	Metals	Total Phosphorus	Nitrate	Nitrite	Ammonia Nitrogen	TKN	PCBs	Total Organic Carbon	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
001	HA-1 (1-2')	3-4-14	1015	S	N	A	X	X	X	X	X	X	X	X		3-4oz ag A	
002	HA-2 (1-2')		1050		N	A	X	X	X	X	X	X	X	X			
003	HA-3 (3-4')		1215		N	A	X	X	X	X	X	X	X	X			
004	HA-4 (3-4')		1325		N	A	X	X	X	X	X	X	X	X			
005	HA-5 (3-4')		1405		N	A	X	X	X	X	X	X	X	X			
006	HA-6 (1-2')		1450		N	A	X	X	X	X	X	X	X	X			

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):
Email #1:
Email #2:
Telephone:
Fax:

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
Kevin Nestingen	3/5/14 12:00pm		
Dynham Express	3/6/14 0745	Lee F. Pace GB	3/6/14 0745

PACE Project No.: 4092914
Receipt Temp = 2 °C
Sample Receipt pH OK / Adjusted
Cooler Custody Seal: Present / ~~Not Present~~
Intact / Not Intact

Version 6.0 06/14/06

Sample Condition Upon Receipt

Pace Analytical Services, Inc.
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Green Bay, WI 54302

Pace Analytical™

Project # **WO# : 4092914**

4092914

Client Name: Braun Intertec

Courier: ☐ Fed Ex ☐ UPS ☐ Client ☐ Pace Other: Dunham Express

Tracking #: 711750

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals Intact: ☐ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☒ no Seals Intact: ☐ yes ☐ no

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other

Thermometer Used SR-7 Type of Ice: (Wet) Blue Dry None ☒ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: 2 /Corr: 2 Biological Tissue is Frozen: ☐ yes ☐ no

Temp Blank Present: ☒ yes ☐ no

Person examining contents:
Date: 3/6/14
Initials: KF

Temp should be above freezing to 6°C for all sample except Biota.
Frozen Biota Samples should be received ≤ 0°C.

		Comments:
Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☒N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: S		
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	☐Yes ☐No ☒N/A	13. ☐ HNO3 ☐ H2SO4 ☐ NaOH ☐ NaOH +ZnAct
All containers needing preservation are found to be in compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	☐Yes ☐No ☒N/A	
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	☐Yes ☐No	Initial when completed / Lab Std #ID of preservative / Date/ Time:
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☒N/A	14.
Trip Blank Present:	☐Yes ☐No ☒N/A	15.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** 3-6-14

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Brian Basten
Pace Analytical Services, Inc.
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

March 14, 2014

RE: LC-13-08064 Weaver Bottoms SED / 4092914 Lab Orders: 14030281

Dear Mr. Brian Basten:

Enclosed are the analytical reports for the EMT Lab Order listed. Also included with this analytical report is a copy of the chain of custody associated with these samples. If you have any questions, please contact me at 847-967-6666.

Sincerely,

Arminta Priddy
Project Manager

Approved by,

Marilyn Krueding
Laboratory Director

This Report Contains 17 pages

State of Illinois, NELAC Accredited Lab. No. 100256
State of Wisconsin, WDNR Accredited Lab No. 999888890

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CLIENT: Pace Analytical Services, Inc. **Date:** *3/14/2014*

Project: LC-13-08064 Weaver Bottoms SED / 4092914

Lab Order: 14030281

CASE NARRATIVE

Unless otherwise noted, samples were analyzed using the methods outlined in the following references:
Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition

Unless otherwise noted, all method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Sample results relate only to the analytes of interest tested and to the sample received at the laboratory.

All results are reported on a wet weight basis, unless otherwise noted. Dry weight adjusted results, reporting limits, method detection limits and dilution factors are indicated by the notation "dry" in the Units column. If present, a dilution factor will adjust the method detection limits and reporting limits.

The test results contained in this report meet all of the requirements of NELAC. Accreditation by the State of Illinois or Wisconsin is not an endorsement or a guarantee of the validity of data generated. For specific information regarding EMT's scope of accreditation , please contact your EMT project manager.

The Reporting Limit listed on the Report of Laboratory Analysis is EMT's reporting limit for the analyte reported. For most test methods this reporting limit is primarily based upon the lowest point in the calibration curve.

Analyst's initials of "OUT" indicate that the analyte was analyzed by a subcontracted laboratory.

Method References:
SW=USEPA, Test Methods for Evaluating Solid Waste, SW-846.
E=USEPA Methods for the Determination of Inorganic Substances in Environmental Samples; Methods for Chemical Analysis of Water and Wastes; Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, 40 CFR Part 136, App A; methods for the Determination of Metals in Environmental Samples; Methods for the Determination of Organic Compounds in Drinking Water.
SM= APHA, Standard Methods for the Examination of Water and Wastewater.
D=ASTM, Annual Book of Standards

Batch numbers starting with a letter indicate an analytical batch while those that are exculsively numerals indicate a preparation batch.

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CLIENT: Pace Analytical Services, Inc. **Date:** *3/14/2014*

Project: LC-13-08064 Weaver Bottoms SED / 4092914

Lab Order: 14030281

CASE NARRATIVE

Analytical Comments for METHOD 7196_CR6_S, 14030281-01A MS1: MS1(soluble matrix spike) recovery is outside of the laboratory acceptance range due to the matrix. The LCS run with the batch is acceptable.

Analytical Comments for METHOD 7196_CR6_S, 14030281-01AMS, 03AMS, 04AMS, 05AMS and 06AMS: The matrix spike recovery is above the laboratory acceptance range due to the matrix. The LCS run with the batch is acceptable.

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Report of Laboratory Analysis

CLIENT:	Pace Analytical Services, Inc.	**Client Sample ID:**	HA-1 (1-2')
Lab Order:	14030281	**Report Date:**	3/14/2014
Project:	LC-13-08064 Weaver Bottoms SED / 4092914	**Collection Date:**	3/4/2014 10:15:00 AM
Lab ID:	14030281-01	**Matrix:**	Solid

Analyses	Result	EMT Reporting Limit	Qual	Units	MDL	Date Analyzed	Batch	DF	Analyst
Hexavalent Chromium		**Method:**		**EPA7196A/3060 BY AQUACHEM / SW3060A**					
Chromium, Hexavalent	< 89.6	896.		mg/kg-dry	89.6	3/13/14 16:03	88364	50.0	JZ1
Solids, Total		**Method:**		**SM2540G**					
Total Solids (Percent)	27.9	0.1		% (Percent)	0.0150	3/11/14 08:00	R198961	1.00	TB2

Qualifiers:

B - Analyte detected in the associated Method Blank
E - Estimated
H - Holding Time Exceeded
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
J - Analyte detected below quantitation limits

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Report of Laboratory Analysis

CLIENT:	Pace Analytical Services, Inc.	**Client Sample ID:**	HA-2 (1-2')
Lab Order:	14030281	**Report Date:**	3/14/2014
Project:	LC-13-08064 Weaver Bottoms SED / 4092914	**Collection Date:**	3/4/2014 10:50:00 AM
Lab ID:	14030281-02	**Matrix:**	Solid

Analyses	Result	EMT Reporting Limit	Qual	Units	MDL	Date Analyzed	Batch	DF	Analyst
Hexavalent Chromium		**Method:**		**EPA7196A/3060 BY AQUACHEM / SW3060A**					
Chromium, Hexavalent	< 68.7	687.		mg/kg-dry	68.7	3/13/14 14:04	88364	50.0	JZ1
Solids, Total		**Method:**		**SM2540G**					
Total Solids (Percent)	36.4	0.1		% (Percent)	0.0150	3/11/14 08:00	R198961	1.00	TB2

Qualifiers:

B - Analyte detected in the associated Method Blank
E - Estimated
H - Holding Time Exceeded
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
J - Analyte detected below quantitation limits

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Report of Laboratory Analysis

CLIENT:	Pace Analytical Services, Inc.	**Client Sample ID:**	HA-3 (3-4')
Lab Order:	14030281	**Report Date:**	3/14/2014
Project:	LC-13-08064 Weaver Bottoms SED / 4092914	**Collection Date:**	3/4/2014 12:15:00 PM
Lab ID:	14030281-03	**Matrix:**	Solid

Analyses	Result	EMT Reporting Limit	Qual	Units	MDL	Date Analyzed	Batch	DF	Analyst
Hexavalent Chromium		**Method:**		**EPA7196A/3060 BY AQUACHEM / SW3060A**					
Chromium, Hexavalent	< 56.4	564.		mg/kg-dry	56.4	3/13/14 14:04	88364	50.0	JZ1
Solids, Total		**Method:**		**SM2540G**					
Total Solids (Percent)	44.3	0.1		% (Percent)	0.0150	3/11/14 08:00	R198961	1.00	TB2

Qualifiers:

B - Analyte detected in the associated Method Blank
E - Estimated
H - Holding Time Exceeded
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
J - Analyte detected below quantitation limits

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Report of Laboratory Analysis

CLIENT:	Pace Analytical Services, Inc.	**Client Sample ID:**	HA-4 (3-4')
Lab Order:	14030281	**Report Date:**	3/14/2014
Project:	LC-13-08064 Weaver Bottoms SED / 4092914	**Collection Date:**	3/4/2014 1:25:00 PM
Lab ID:	14030281-04	**Matrix:**	Solid

Analyses	Result	EMT Reporting Limit	Qual	Units	MDL	Date Analyzed	Batch	DF	Analyst
Hexavalent Chromium		**Method:**		**EPA7196A/3060 BY AQUACHEM / SW3060A**					
Chromium, Hexavalent	< 98	980.		mg/kg-dry	98.0	3/13/14 14:04	88364	50.0	JZ1
Solids, Total		**Method:**		**SM2540G**					
Total Solids (Percent)	25.5	0.1		% (Percent)	0.0150	3/11/14 08:00	R198961	1.00	TB2

Qualifiers:

B - Analyte detected in the associated Method Blank
E - Estimated
H - Holding Time Exceeded
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
J - Analyte detected below quantitation limits

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Report of Laboratory Analysis

CLIENT:	Pace Analytical Services, Inc.	**Client Sample ID:**	HA-5 (3-4')
Lab Order:	14030281	**Report Date:**	3/14/2014
Project:	LC-13-08064 Weaver Bottoms SED / 4092914	**Collection Date:**	3/4/2014 2:05:00 PM
Lab ID:	14030281-05	**Matrix:**	Solid

Analyses	Result	EMT Reporting Limit	Qual	Units	MDL	Date Analyzed	Batch	DF	Analyst
Hexavalent Chromium		**Method:**		**EPA7196A/3060 BY AQUACHEM / SW3060A**					
Chromium, Hexavalent	< 89.6	896.		mg/kg-dry	89.6	3/13/14 14:04	88364	50.0	JZ1
Solids, Total		**Method:**		**SM2540G**					
Total Solids (Percent)	27.9	0.1		% (Percent)	0.0150	3/11/14 08:00	R198961	1.00	TB2

Qualifiers:

B - Analyte detected in the associated Method Blank
E - Estimated
H - Holding Time Exceeded
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
J - Analyte detected below quantitation limits

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Report of Laboratory Analysis

CLIENT:	Pace Analytical Services, Inc.	**Client Sample ID:**	HA-6 (1-2')
Lab Order:	14030281	**Report Date:**	3/14/2014
Project:	LC-13-08064 Weaver Bottoms SED / 4092914	**Collection Date:**	3/4/2014 2:50:00 PM
Lab ID:	14030281-06	**Matrix:**	Solid

Analyses	Result	EMT Reporting Limit	Qual	Units	MDL	Date Analyzed	Batch	DF	Analyst
Hexavalent Chromium		**Method:**		**EPA7196A/3060 BY AQUACHEM / SW3060A**					
Chromium, Hexavalent	< 78.4	784.		mg/kg-dry	78.4	3/13/14 14:06	88364	50.0	JZ1
Solids, Total		**Method:**		**SM2540G**					
Total Solids (Percent)	31.9	0.1		% (Percent)	0.0150	3/11/14 08:00	R198961	1.00	TB2

Qualifiers:

B - Analyte detected in the associated Method Blank
E - Estimated
H - Holding Time Exceeded
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
J - Analyte detected below quantitation limits

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Client: Pace Analytical Services, Inc.
Project: Pace Green Bay

DATES REPORT

3/14/2014

Lab Order: 14030281

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date	Batch ID
14030281-01A	HA-1 (1-2')	3/4/14 10:15	Solid	Hexavalent Chromium		3/12/14 14:15	3/13/14 16:03	88364
				Percent Moisture			3/11/14 08:00	R198960
				Solids, Total (TS)			3/11/14 08:00	R198961
14030281-02A	HA-2 (1-2')	3/4/14 10:50		Hexavalent Chromium		3/12/14 14:15	3/13/14 14:04	88364
				Percent Moisture			3/11/14 08:00	R198960
				Solids, Total (TS)			3/11/14 08:00	R198961
14030281-03A	HA-3 (3-4')	3/4/14 12:15		Hexavalent Chromium		3/12/14 14:15	3/13/14 14:04	88364
				Percent Moisture			3/11/14 08:00	R198960
				Solids, Total (TS)			3/11/14 08:00	R198961
14030281-04A	HA-4 (3-4')	3/4/14 13:25		Hexavalent Chromium		3/12/14 14:15	3/13/14 14:04	88364
				Percent Moisture			3/11/14 08:00	R198960
				Solids, Total (TS)			3/11/14 08:00	R198961
14030281-05A	HA-5 (3-4')	3/4/14 14:05		Hexavalent Chromium		3/12/14 14:15	3/13/14 14:04	88364
				Percent Moisture			3/11/14 08:00	R198960
				Solids, Total (TS)			3/11/14 08:00	R198961
14030281-06A	HA-6 (1-2')	3/4/14 14:50		Hexavalent Chromium		3/12/14 14:15	3/13/14 14:06	88364
				Percent Moisture			3/11/14 08:00	R198960
				Solids, Total (TS)			3/11/14 08:00	R198961

CLIENT: Pace Analytical Services, Inc.

Project: Pace Green Bay

QC SUMMARY REPORT

Method Blank

Lab Order: 14030281

Sample ID: **MB-R198961**	Batch ID: **R198961**	Test Code: **M2540G**	Units: **% (Percent)**	Analysis Date: **3/11/14 08:00**	Prep Date:
Client ID:		Run ID: **SOLIDS_140311B**		SeqNo: **1942613**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Solids (Percent)	< 0.10	0.1									

Sample ID: **MB-88364**	Batch ID: **88364**	Test Code: **SW7196A**	Units: **mg/kg**	Analysis Date: **3/13/14 13:55**	Prep Date: **3/12/14 14:15**
Client ID:		Run ID: **KONELAB_140313E**		SeqNo: **1943809**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	< 25	25									

Sample ID: **MB-R198960**	Batch ID: **R198960**	Test Code: **2540G**	Units: **% (Percent)**	Analysis Date: **3/11/14 08:00**	Prep Date:
Client ID:		Run ID: **SOLIDS_140311A**		SeqNo: **1942591**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	< 0.10	0.1									

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

CLIENT: Pace Analytical Services, Inc.

Project: Pace Green Bay

QC SUMMARY REPORT

Sample Duplicate

Lab Order: 14030281

Sample ID: **14030281-06A-DUP** Batch ID: **R198961** Test Code: **M2540G** Units: **% (Percent)** Analysis Date: **3/11/14 08:00** Prep Date:

Client ID: **HA-6 (1-2')** Run ID: **SOLIDS_140311B** SeqNo: **1942621**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Solids (Percent)	32.58	0.1	0	0	0	0	0	31.9	2.11	10	

Sample ID: **14030281-01A DUP** Batch ID: **88364** Test Code: **SW7196A** Units: **mg/kg-dry** Analysis Date: **3/13/14 13:59** Prep Date: **3/12/14 14:15**

Client ID: **HA-1 (1-2')** Run ID: **KONELAB_140313E** SeqNo: **1943815**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	< 900	896	0	0	0	0	0	0			

Sample ID: **14030267-01C-DUP** Batch ID: **R198960** Test Code: **2540G** Units: **% (Percent)** Analysis Date: **3/11/14 08:00** Prep Date:

Client ID: Run ID: **SOLIDS_140311A** SeqNo: **1942611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	16.05	0.1	0	0	0	0	0	16.05	0	10	

Sample ID: **14030267-12C-DUP** Batch ID: **R198960** Test Code: **2540G** Units: **% (Percent)** Analysis Date: **3/11/14 08:00** Prep Date:

Client ID: Run ID: **SOLIDS_140311A** SeqNo: **1942612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	20.21	0.1	0	0	0	0	0	19.96	1.24	10	

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

CLIENT: Pace Analytical Services, Inc.

Project: Pace Green Bay

QC SUMMARY REPORT

Sample Matrix Spike

Lab Order: 14030281

Sample ID: **14030281-01A MS1** Batch ID: **88364** Test Code: **SW7196A** Units: **mg/kg-dry** Analysis Date: **3/13/14 16:03** Prep Date: **3/12/14 14:15**

Client ID: **HA-1 (1-2')** Run ID: **KONELAB_140313E** SeqNo: **1943816**

Analyte	Soluble Martix Spike Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	< 890	892	142.8	0	0	70	130	0			S

Sample ID: **14030281-01A MSD1** Batch ID: **88364** Test Code: **SW7196A** Units: **mg/kg-dry** Analysis Date: **3/13/14 16:03** Prep Date: **3/12/14 14:15**

Client ID: **HA-1 (1-2')** Run ID: **KONELAB_140313E** SeqNo: **1943817**

Analyte	Insoluble Matrix Spike Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1797	1790	0	0	0	70	130	0			

Sample ID: **14030281-01AMS** Batch ID: **88364** Test Code: **SW7196A** Units: **mg/kg-dry** Analysis Date: **3/13/14 16:03** Prep Date: **3/12/14 14:15**

Client ID: **HA-1 (1-2')** Run ID: **KONELAB_140313E** SeqNo: **1943831**

Analyte	Verification Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1316	896	1061	0	124	85	115	0			S

Sample ID: **14030281-02AMS** Batch ID: **88364** Test Code: **SW7196A** Units: **mg/kg-dry** Analysis Date: **3/13/14 14:04** Prep Date: **3/12/14 14:15**

Client ID: **HA-2 (1-2')** Run ID: **KONELAB_140313E** SeqNo: **1943832**

Analyte	Verification Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	874.1	687	813.2	0	107	85	115	0			

Sample ID: **14030281-03AMS** Batch ID: **88364** Test Code: **SW7196A** Units: **mg/kg-dry** Analysis Date: **3/13/14 14:04** Prep Date: **3/12/14 14:15**

Client ID: **HA-3 (3-4')** Run ID: **KONELAB_140313E** SeqNo: **1943833**

Analyte	Verification Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	825.2	564	668.2	0	123	85	115	0			S

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

CLIENT: Pace Analytical Services, Inc.

Project: Pace Green Bay

Lab Order: 14030281

QC SUMMARY REPORT

Sample Matrix Spike

Analyte	Verification	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Sample ID: 14030281-04AMS Batch ID: **88364** Test Code: **SW7196A** Units: **mg/kg-dry** Analysis Date: **3/13/14 14:04** Prep Date: **3/12/14 14:15**												
Client ID: **HA-4 (3-4')** Run ID: **KONELAB_140313E** SeqNo: **1943834**												
Chromium, Hexavalent		1438	980	1161	0	124	85	115	0			S
Sample ID: 14030281-05AMS Batch ID: **88364** Test Code: **SW7196A** Units: **mg/kg-dry** Analysis Date: **3/13/14 14:04** Prep Date: **3/12/14 14:15**												
Client ID: **HA-5 (3-4')** Run ID: **KONELAB_140313E** SeqNo: **1943835**												
Chromium, Hexavalent		1306	896	1061	0	123	85	115	0			S
Sample ID: 14030281-06AMS Batch ID: **88364** Test Code: **SW7196A** Units: **mg/kg-dry** Analysis Date: **3/13/14 14:06** Prep Date: **3/12/14 14:15**												
Client ID: **HA-6 (1-2')** Run ID: **KONELAB_140313E** SeqNo: **1943836**												
Chromium, Hexavalent		1127	784	927.9	0	121	85	115	0			S
Sample ID: 14030356-01AMS Batch ID: **88364** Test Code: **SW7196A** Units: **mg/kg** Analysis Date: **3/13/14 16:03** Prep Date: **3/12/14 14:15**												
Client ID: Run ID: **KONELAB_140313E** SeqNo: **1943837**												
Chromium, Hexavalent		301.8	250	296	0	102	85	115	0			
Sample ID: 14030281-01ADUPM Batch ID: **88364** Test Code: **SW7196A** Units: **mg/kg-dry** Analysis Date: **3/13/14 13:59** Prep Date: **3/12/14 14:15**												
Client ID: **HA-1 (1-2')** Run ID: **KONELAB_140313E** SeqNo: **1943844**												
Chromium, Hexavalent		1340	896	1061	0	126	85	115	0			S

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

CLIENT: Pace Analytical Services, Inc.

Project: Pace Green Bay

QC SUMMARY REPORT

Laboratory Control Spike - generic

Lab Order: 14030281

Sample ID: **LCS-R198961** Batch ID: **R198961** Test Code: **M2540G** Units: **ppm** Analysis Date: **3/11/14 08:00** Prep Date:

Client ID: Run ID: **SOLIDS_140311B** SeqNo: **1942614**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Solids (Percent)	1838	0.1	1889	0	97.3	85	115	0			

Sample ID: **LCS1-88364** Batch ID: **88364** Test Code: **SW7196A** Units: **mg/kg** Analysis Date: **3/13/14 13:55** Prep Date: **3/12/14 14:15**

Client ID: Run ID: **KONELAB_140313E** SeqNo: **1943824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	36.19	25	40	0	90.5	84	110	0			

Sample ID: **LCS2-88364** Batch ID: **88364** Test Code: **SW7196A** Units: **mg/kg** Analysis Date: **3/13/14 13:55** Prep Date: **3/12/14 14:15**

Client ID: Run ID: **KONELAB_140313E** SeqNo: **1943825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	764.4	500	805	0	95	84	110	0			

Sample ID: **LCS-R198960** Batch ID: **R198960** Test Code: **2540G** Units: **ppm** Analysis Date: **3/11/14 08:00** Prep Date:

Client ID: Run ID: **SOLIDS_140311A** SeqNo: **1942592**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	1838	0.1	1889	0	97.3	85	115	0			

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

CLIENT: Pace Analytical Services, Inc.

Project: Pace Green Bay

QC SUMMARY REPORT

Post Digestion/Distallation Spike

Lab Order: 14030281

Sample ID: **14030281-01APDS** Batch ID: **88364** Test Code: **SW7196A** Units: **mg/kg-dry** Analysis Date: **3/13/14 14:06** Prep Date: **3/12/14 14:15**

Client ID: Run ID: **KONELAB_140313E** SeqNo: **1943842**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	702.8	896	716.8	0	98	80	120	0			J

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

1403025
14C0327

Chain of Custody

EMT

Pace Analytical®
www.pacelabs.com

Workorder: 4092914 **Workorder Name:** LC-13-08064 WEAVER BOTTOMS SED **Results Requested** 3/20/2014

Report / Invoice To	Subcontract To
	P.O.
Pace Analytical Brian Basten 1241 Bellevue St, STE 9 Green Bay, WI 54302	

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: None	Requested Analysis: Hex Cr	Requested Analysis: Tri Cr (3-6-14)	LAB USE ONLY
1	HA-1 (1-2')	3/4/2014 10:15	4092914001	Solid	X	X	X	01A
2	HA-2 (1-2')	3/4/2014 10:50	4092914002	Solid	X	X	X	02A
3	HA-3 (3-4')	3/4/2014 12:15	4092914003	Solid	X	X	X	03A
4	HA-4 (3-4')	3/4/2014 13:25	4092914004	Solid	X	X	X	04A
5	HA-5 (3-4')	3/4/2014 14:05	4092914005	Solid	X	X	X	05A
6	HA-6 (1-2')	3/4/2014 14:50	4092914006	Solid	X	X	X	06A

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible] Pace	3/6/14 1700		
2				
3			[signature]	3/11/14 11:45

Comments

Sample Origin - MN – No Cert Needed

Cooler Temperature on Receipt 3 °C **Custody Seal** Y or N **Received on Ice** (Y) or N **Samples Intact** (Y) or N

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Soil Hand Auger Logs

BRAUN
INTERTEC

LOG OF BORING

Braun Project No. LC-13-08064
Pre-Project Dredge Material Sediment Core &
Baseline Contaminant Analysis
Weaver - Prichard Lake
Kellogg, Minnesota

BORING: **HA-1**
LOCATION: See attached sketch

DRILLER: D. Bradshaw | METHOD: Hand Auger | DATE: **3/4/2014** | SCALE: **1" = 4 '**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
	0.0					
			Ice			
	0.0/4.0					
	1.0/5.0		Sandy Organic Silt/Clay, dark brown to black, loose, saturated, organic odor			PID: 0.0 ppm
						PID: 0.0 ppm
			Maximum Dredge Depth of 4 ft into sediment			
	6.0/10.0					PID: 0.0 ppm
			END OF BORING (2 ft below max. dredge depth of 4 ft)			

(See Descriptive Terminology sheet for explanation of abbreviations)

BRAUN INTERTEC

LOG OF BORING

Braun Project No. LC-13-08064
Pre-Project Dredge Material Sediment Core & Baseline Contaminant Analysis
Weaver - Prichard Lake
Kellogg, Minnesota

BORING: **HA-2**
LOCATION: See attached sketch

DRILLER: D. Bradshaw | METHOD: Hand Auger | DATE: **3/4/2014** | SCALE: **1" = 4 '**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
	0.0					
			Ice			
	0.0/4.0					
	1.0/5.0		Organic Silt/Clay with sand, dark brown to black, loose, saturated, organic odor			PID: 0.0 ppm
			Maximum Dredge Depth of 4 ft into sediment			PID: 0.0 ppm
			Sandy Organic Silt/Clay, dark brown to black, loose, saturated, organic odor			PID: 0.0 ppm
	6.0/10.0					
			END OF BORING (2 ft below max. dredge depth of 4 ft)			

(See Descriptive Terminology sheet for explanation of abbreviations)

BRAUN INTERTEC

LOG OF BORING

Braun Project No. LC-13-08064
Pre-Project Dredge Material Sediment Core &
Baseline Contaminant Analysis
Weaver - Prichard Lake
Kellogg, Minnesota

BORING: **HA-3**

LOCATION: See attached sketch

DRILLER: D. Bradshaw | METHOD: Hand Auger | DATE: **3/4/2014** | SCALE: **1" = 4 '**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL ▽	Tests or Notes
	0.0					
			Ice			
	0.0/4.0					
	1.0/5.0		Organic Silt/Clay with sand, dark brown to black, loose, saturated, organic odor			PID: 0.0 ppm
			Maximum Dredge Depth of 4 ft into sediment			PID: 0.0 ppm
			Sandy Organic Silt/Clay, dark brown to black, loose, saturated, organic odor			
	6.0/10.0					PID: 0.0 ppm
			END OF BORING (2 ft below max. dredge depth of 4 ft)			

(See Descriptive Terminology sheet for explanation of abbreviations)

BRAUN INTERTEC

LOG OF BORING

Braun Project No. LC-13-08064
Pre-Project Dredge Material Sediment Core &
Baseline Contaminant Analysis
Weaver - Prichard Lake
Kellogg, Minnesota

BORING: **HA-4**
LOCATION: See attached sketch

DRILLER: D. Bradshaw | METHOD: Hand Auger | DATE: **3/4/2014** | SCALE: **1" = 4 '**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL ▽	Tests or Notes
	0.0					
			Ice			
	0.0/4.0					
	1.0/5.0		Organic Silt/Clay with sand, dark brown to black, loose, saturated, organic odor			PID: 0.0 ppm
			Maximum Dredge Depth of 4 ft into sediment			PID: 0.0 ppm
			Organic Silt/Clay with sand, dark brown to black, loose, saturated, organic odor			PID: 0.0 ppm
	6.0/10.0					
			END OF BORING (2 ft below max. dredge depth of 4 ft)			

(See Descriptive Terminology sheet for explanation of abbreviations)

BRAUN INTERTEC

LOG OF BORING

Braun Project No. LC-13-08064
Pre-Project Dredge Material Sediment Core & Baseline Contaminant Analysis
Weaver - Prichard Lake
Kellogg, Minnesota

BORING: **HA-5**

LOCATION: See attached sketch

DRILLER: D. Bradshaw | METHOD: Hand Auger | DATE: **3/4/2014** | SCALE: **1" = 4 '**

Elev. feet	Depth feet 0.0	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL ▽	Tests or Notes
			Ice			
	0.0/4.0					
	1.0/5.0		Organic Silt/Clay with sand, dark brown to black, loose, saturated, organic odor			PID: 0.0 ppm
			Maximum Dredge Depth of 4 ft into sediment			PID: 0.0 ppm
	6.0/10.0		Organic Silt/Clay with sand, dark brown to black, loose, saturated, organic odor			PID: 0.0 ppm
			END OF BORING (2 ft below max. dredge depth of 4 ft)			

(See Descriptive Terminology sheet for explanation of abbreviations)

BRAUN
INTERTEC

LOG OF BORING

Braun Project No. LC-13-08064
Pre-Project Dredge Material Sediment Core &
Baseline Contaminant Analysis
Weaver - Prichard Lake
Kellogg, Minnesota

BORING: **HA-6**
LOCATION: See attached sketch

DRILLER: D. Bradshaw | METHOD: Hand Auger | DATE: **3/4/2014** | SCALE: **1" = 4 '**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
	0.0					
			Ice			
	0.0/4.0					
	1.0/5.0		Organic Silt/Clay with sand, dark brown to black, loose, saturated, organic odor			PID: 0.0 ppm
			Maximum Dredge Depth of 4 ft into sediment			PID: 0.0 ppm
			Sandy organic Silt/Clay with sand, dark brown to black, loose, saturated, organic odor			PID: 0.0 ppm
	6.0/10.0					
			END OF BORING (2 ft below max. dredge depth of 4 ft)			

(See Descriptive Terminology sheet for explanation of abbreviations)