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July 22, 2020

Ms. Terese Van Donsel
United States Environmental Protection Agency (USEPA)
Region 5
Mail Code: SR-6J
77 West Jackson Boulevard
Chicago, Illinois 60604-3507

Via Email: vandonsel.terese@epa.gov

RE: SME Serial Letter #64
2020 Groundwater Monitoring Report
Sheboygan River and Harbor Site
Sheboygan, Wisconsin
SME Project No. 069638.00.055

Dear Terese:

Pursuant to the Post Remediation Monitoring Plan, SME is providing the groundwater analytical results for the 2020 monitoring event. Six (6) groundwater monitoring wells are located down-gradient of the groundwater monitoring/interceptor trench (GMIT). The wells are sampled for polychlorinated biphenyls (PCBs) following completion of the source removal activities¹. The objective of the monitoring of these wells is to assess the need to operate the GMIT².

SME conducted the sampling on June 9, 2020. We sampled the down gradient monitoring wells with a low-flow sampling equipment in accordance with the Field Sampling Plan submitted and approved as part of the Phase I Design. A map of the well locations is provided in Attachment 1. The samples were analyzed for total PCBs.

A summary of the 2020 results compared to the historical data is provided in Table 1. We also compared the groundwater results to the NR140 groundwater criteria. A copy of the laboratory report is provided in Attachment 2.

There was one detection of PCBs in excess of the Limit of Quantitation (0.15 µg/L). That detection was at MW-13. PCBs were estimated to be present in one of the six wells sampled when compared to the lower Limit of Detection (0.046 µg/L)³. The concentrations of PCBs in all wells were the lowest at any time since monitoring began and have not exceeded the Maximum Contaminant Level for over two years. The data does not indicate the need to operate the GMIT.

In the past we have concluded that based on the historical data and modeling, as long as the building foundation slab remains acting as an engineering control to prevent infiltration, the river should not be impacted by the groundwater.

¹ *Long-Term Monitoring and Operations Plan, Upper River – Phase 1*, PRS and URS, May 2004.

² *Remedial Design Work Plan, Upper River – Phase I and II*, PRS and URS, June 2004.

³ The data was qualified as estimated.

However, the Phase II investigation of the Tecumseh facility in 2016 and 2018 demonstrated there were high levels of exposed PCBs outside of the footprint of foundation slab. The concentrations ranged from 0.03 to 15,200 mg/kg with an average of 965 mg/kg. The presence of this exposed impact and the lack of groundwater impact implies the leaching to groundwater is an incomplete preferential pathway.

The *Long-Term Monitoring and Operations Plan, Upper River – Phase 1*, states the groundwater shall be sampled for PCB concentrations on a semi-annual basis for a period of five years following completion of source removal activities. Semi-annual occurred for eight years after completion of source removal and annually since 2013. During this time, the concentrations of PCBs in groundwater have continued to decline to below the MCL and in most wells, below the NR140 criteria. Therefore, we request that the monitoring frequency be revised to bi-annually (every other year) until the additional source removal is complete and then terminated.

If you have questions regarding the sampling event, feel free to contact Keith Egan at (513) 319-8919 or keith.egan@sme-usa.com.

Respectfully,

SME

Megan Schaner
Staff Geologist

Keith Egan, CP
Chief Consultant

Attachments: Table 1 – Groundwater Analytical Results
Figure 1 – Groundwater Features Diagram
Laboratory Analytical Report

Distribution: Mr. Tom Wentland, Wisconsin Department of Natural Resources via email
(Thomas.wentland@wisconsin.gov)
Ms. Debbie McMillan, PRS via email (dmcmillan@grhdevelopment.com)
Mr. Peter Johnson, Johnson-Wright via email (pjohnson@johnsonwright.net)
Mr. Jason Smith, Tecumseh Products Company, LLC via email
(Jason.smith@tecumseh.com)

TABLE 1
GROUNDWATER ANALYTICAL RESULTS



TABLE 1
FORMER TECUMSEH SITE
CLEVELAND STREET, SHEBOYGAN FALLS, WISCONSIN
GROUNDWATER ANALYTICAL RESULTS
SME Project No. 069638.00.055

SAMPLE DATE	Wisconsin DNR NR 140 Criteria	USEPA Maximum Contaminant Level (MCL)	11/17/2004	5/27/2005	12/13/2005	7/10/2006	11/20/2006	5/31/2007	10/23/2007	5/14/2008	10/15/2008
WELL ID											
MW9	0.03	0.5	0.47	0.47	0.49	0.49	0.48	0.49	0.47	0.49	0.24
MW10			0.47	0.48	0.50	NC	1.1	0.49	0.98	0.72	0.5
MW12			1.5	0.47	0.50	0.47	0.57	0.46	0.44	0.83	0.23
MW13			1.5	0.48	0.48	2.1	1.1	0.82	1.5	1.6	1.9
MW16			0.49	0.48	0.50	0.47	0.49	0.4	0.47	0.49	0.24
MW17			0.48	0.48	0.48	0.46	0.48	0.51	0.47	0.5	0.24

SAMPLE DATE	Wisconsin DNR NR 140 Criteria	USEPA Maximum Contaminant Level (MCL)	5/14/2009	10/22/2009	5/14/2010	10/29/2010	6/29/2011	11/29/2011	6/28/2012	11/7/2012	6/4/2013
WELL ID											
MW9	0.03	0.5	0.24	0.23	0.29	0.29	0.29	0.31	0.29	0.31	0.25
MW10			0.44	0.47	0.39	0.85	0.44	0.67	0.38	0.57	0.55
MW12			0.49	0.23	0.33	0.88	0.34	0.31	0.8	0.31	0.25
MW13			1.6	1.0	2.0	1.1	1.7	1.5	0.82	0.54	0.44J
MW16			0.23	0.23	0.29	0.29	0.29	0.31	0.29	0.31	0.27
MW17			0.23	0.23	0.30	0.29	0.29	0.31	0.29	0.31	0.26

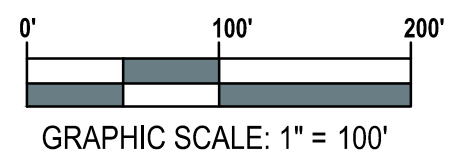
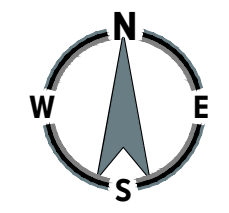
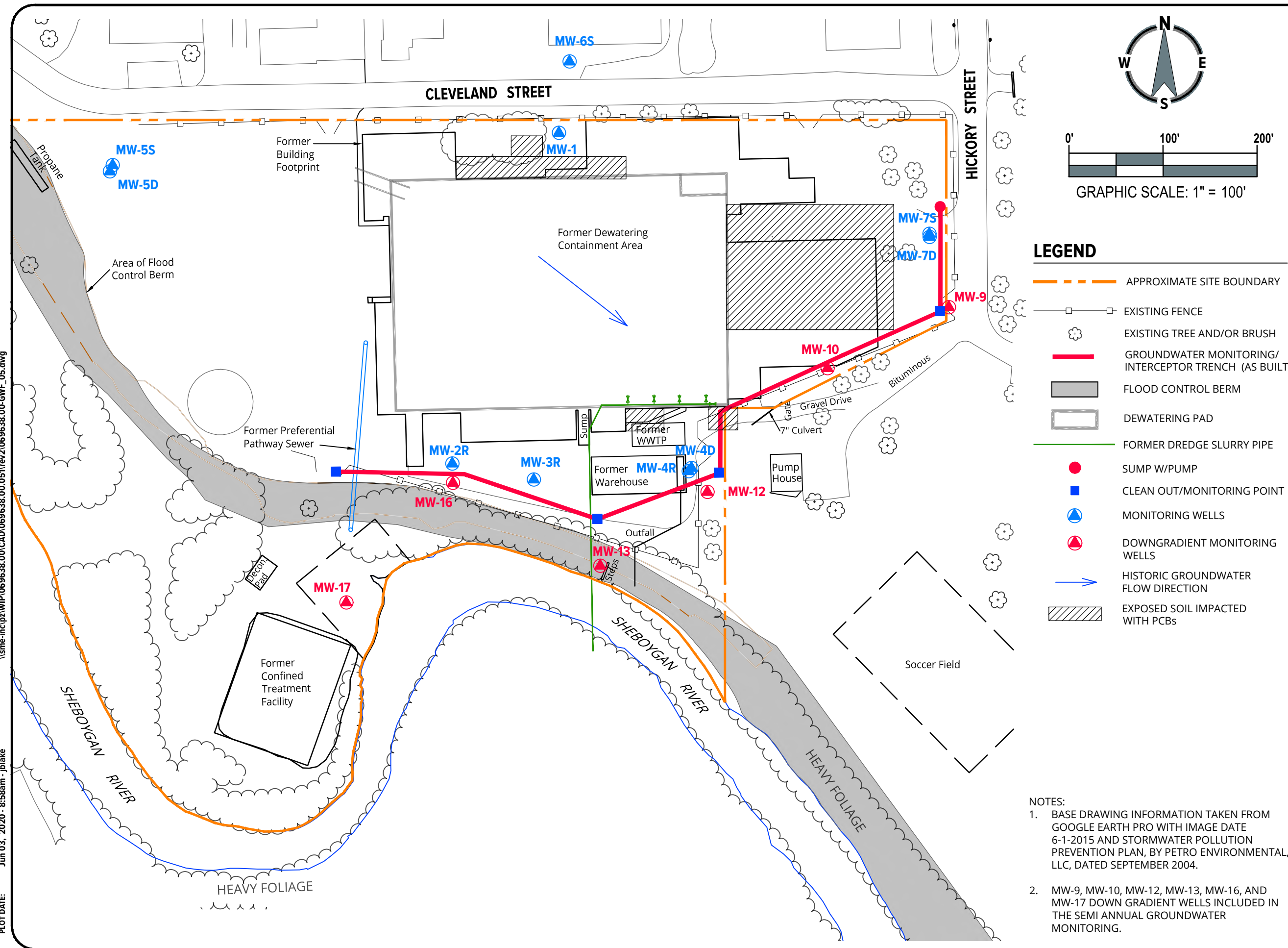
SAMPLE DATE	Wisconsin DNR NR 140 Criteria	USEPA Maximum Contaminant Level (MCL)	6/19/2014	6/11/2015	7/13/2016	8/30/2017	5/10/2018	6/4/2019	6/9/2020	MEAN	MAXIMUM
WELL ID											
MW9	0.03	0.5	0.25	0.24	0.25	0.26	0.26	0.11	0.045	ND	ND
MW10			0.57	0.44	0.61	0.65	0.26	0.11	0.045	0.53	1.1
MW12			0.33	0.30	0.52	0.59	0.25	0.11	0.044	0.47	1.5
MW13			0.91	1.2	0.66	0.65	0.35	0.26	0.42	1.09	2.1
MW16			0.25	0.24	0.25	0.26	0.27	0.16	0.097	ND	0.50
MW17			0.27*	0.24	0.26	0.26	0.26	0.13	0.045	ND	0.51

NOTES:

- (1) PCB concentrations reported in µg/L (parts per billion or ppb) unless otherwise noted.
- (2) Grey shading - PCBs were not detected above the Limit of Detection (LOD).
- (3) Italicized numbers are estimated because the concentration was less than Limit of Quantitation (LOQ).
- (4) NA - Not available.
- (5) NC - Not Collected
- (6) * - PCBs were not detected in the duplicate sample
- (7) PCB results shown from the 6/9/2020 were the highest archlor LOD or sum of the detections.

ATTACHMENT 1
FIGURE 1 – GROUNDWATER FEATURES DIAGRAM

Plot Date: Jun 03, 2020 - 8:58am - jblake
 \\sme-inc\p2\WIP\069638.00\CAD\069638.00.051\rev2\069638.00-GWF_05.dwg



LEGEND

- APPROXIMATE SITE BOUNDARY
- EXISTING FENCE
- EXISTING TREE AND/OR BRUSH
- GROUNDWATER MONITORING/ INTERCEPTOR TRENCH (AS BUILT)
- FLOOD CONTROL BERM
- DEWATERING PAD
- FORMER DREDGE SLURRY PIPE
- SUMP W/PUMP
- CLEAN OUT/MONITORING POINT
- ▲ MONITORING WELLS
- ▲ DOWNGRADIENT MONITORING WELLS
- HISTORIC GROUNDWATER FLOW DIRECTION
- EXPOSED SOIL IMPACTED WITH PCBs

- NOTES:**
- BASE DRAWING INFORMATION TAKEN FROM GOOGLE EARTH PRO WITH IMAGE DATE 6-1-2015 AND STORMWATER POLLUTION PREVENTION PLAN, BY PETRO ENVIRONMENTAL, LLC, DATED SEPTEMBER 2004.
 - MW-9, MW-10, MW-12, MW-13, MW-16, AND MW-17 DOWN GRADIENT WELLS INCLUDED IN THE SEMI ANNUAL GROUNDWATER MONITORING.



Project
SHEBOYGAN RIVER SUPERFUND SITE

Project Location
FORMER TECUMSEH SITE SHEBOYGAN FALLS, WISCONSIN

Sheet Name
TECUMSEH FALLS PROPERTY GROUNDWATER FEATURES

No.	Revision Date

Date 5-5-2020

CADD JAB

Designer KE/AJL

Scale AS NOTED

Project 069638.00.051

Figure No. 1

DRAWING NOTE: SCALE DEPICTED IS MEANT FOR 11" X 17" AND WILL SCALE INCORRECTLY IF PRINTED ON ANY OTHER SIZE MEDIA
 NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR CONSENT OF SME
 © 2020

ATTACHMENT 2
LABORATORY ANALYTICAL REPORT

June 16, 2020

Keith Egan
Pollution Risk Services LLC
One North Commerce Park
Suite 318
Cincinnati, OH 452153174

RE: Project: 069638.00.055 SHEBOYGAN RIVER
Pace Project No.: 40209148

Dear Keith Egan:

Enclosed are the analytical results for sample(s) received by the laboratory on June 09, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

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

Sincerely,



Tod Noltemeyer
tod.noltemeyer@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Aaron Lammers, SME
Megan Schaner, SME



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 069638.00.055 SHEBOYGAN RIVER
Pace Project No.: 40209148

Pace Analytical Services Minneapolis

A2LA Certification #: 2926.01	Minnesota Petrofund Certification #: 1240
Alabama Certification #: 40770	Mississippi Certification #: MN00064
Alaska Contaminated Sites Certification #: 17-009	Missouri Certification #: 10100
Alaska DW Certification #: MN00064	Montana Certification #: CERT0092
Arizona Certification #: AZ0014	Nebraska Certification #: NE-OS-18-06
Arkansas DW Certification #: MN00064	Nevada Certification #: MN00064
Arkansas WW Certification #: 88-0680	New Hampshire Certification #: 2081
California Certification #: 2929	New Jersey Certification #: MN002
CNMI Saipan Certification #: MP0003	New York Certification #: 11647
Colorado Certification #: MN00064	North Carolina DW Certification #: 27700
Connecticut Certification #: PH-0256	North Carolina WW Certification #: 530
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137	North Dakota Certification #: R-036
Florida Certification #: E87605	Ohio DW Certification #: 41244
Georgia Certification #: 959	Ohio VAP Certification #: CL101
Guam EPA Certification #: MN00064	Oklahoma Certification #: 9507
Hawaii Certification #: MN00064	Oregon Primary Certification #: MN300001
Idaho Certification #: MN00064	Oregon Secondary Certification #: MN200001
Illinois Certification #: 200011	Pennsylvania Certification #: 68-00563
Indiana Certification #: C-MN-01	Puerto Rico Certification #: MN00064
Iowa Certification #: 368	South Carolina Certification #: 74003001
Kansas Certification #: E-10167	Tennessee Certification #: TN02818
Kentucky DW Certification #: 90062	Texas Certification #: T104704192
Kentucky WW Certification #: 90062	Utah Certification #: MN00064
Louisiana DEQ Certification #: 03086	Vermont Certification #: VT-027053137
Louisiana DW Certification #: MN00064	Virginia Certification #: 460163
Maine Certification #: MN00064	Washington Certification #: C486
Maryland Certification #: 322	West Virginia DEP Certification #: 382
Massachusetts DWP Certification #: via MN 027-053-137	West Virginia DW Certification #: 9952 C
Michigan Certification #: 9909	Wisconsin Certification #: 999407970
Minnesota Certification #: 027-053-137	Wyoming UST Certification #: via A2LA 2926.01
Minnesota Dept of Ag Certification #: via MN 027-053-137	

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SAMPLE SUMMARY

Project: 069638.00.055 SHEBOYGAN RIVER

Pace Project No.: 40209148

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40209148001	MW-9	Water	06/09/20 13:00	06/09/20 14:40
40209148002	MW-10	Water	06/09/20 10:25	06/09/20 14:40
40209148003	MW-12	Water	06/09/20 09:30	06/09/20 14:40
40209148004	MW-13	Water	06/09/20 12:15	06/09/20 14:40
40209148005	MW-16	Water	06/09/20 11:15	06/09/20 14:40
40209148006	MW-17	Water	06/09/20 08:30	06/09/20 14:40
40209148007	DUPLICATE GW	Water	06/09/20 00:00	06/09/20 14:40

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SAMPLE ANALYTE COUNT

Project: 069638.00.055 SHEBOYGAN RIVER

Pace Project No.: 40209148

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40209148001	MW-9	EPA 8082	RAG	11	PASI-M
40209148002	MW-10	EPA 8082	RAG	11	PASI-M
40209148003	MW-12	EPA 8082	RAG	11	PASI-M
40209148004	MW-13	EPA 8082	RAG	11	PASI-M
40209148005	MW-16	EPA 8082	RAG	11	PASI-M
40209148006	MW-17	EPA 8082	RAG	11	PASI-M
40209148007	DUPLICATE GW	EPA 8082	RAG	11	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

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PROJECT NARRATIVE

Project: 069638.00.055 SHEBOYGAN RIVER
Pace Project No.: 40209148

Method: EPA 8082
Description: 8082 GCS PCB
Client: SME
Date: June 16, 2020

General Information:

7 samples were analyzed for EPA 8082 by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA Mod. 3510C with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 069638.00.055 SHEBOYGAN RIVER

Pace Project No.: 40209148

Sample: MW-9 **Lab ID: 40209148001** Collected: 06/09/20 13:00 Received: 06/09/20 14:40 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB									
Analytical Method: EPA 8082 Preparation Method: EPA Mod. 3510C									
Pace Analytical Services - Minneapolis									
PCB-1016 (Aroclor 1016)	<0.041	ug/L	0.14	0.041	1	06/11/20 17:31	06/12/20 19:00	12674-11-2	
PCB-1221 (Aroclor 1221)	<0.042	ug/L	0.14	0.042	1	06/11/20 17:31	06/12/20 19:00	11104-28-2	
PCB-1232 (Aroclor 1232)	<0.036	ug/L	0.12	0.036	1	06/11/20 17:31	06/12/20 19:00	11141-16-5	
PCB-1242 (Aroclor 1242)	<0.037	ug/L	0.12	0.037	1	06/11/20 17:31	06/12/20 19:00	53469-21-9	
PCB-1248 (Aroclor 1248)	<0.040	ug/L	0.13	0.040	1	06/11/20 17:31	06/12/20 19:00	12672-29-6	
PCB-1254 (Aroclor 1254)	<0.041	ug/L	0.14	0.041	1	06/11/20 17:31	06/12/20 19:00	11097-69-1	
PCB-1260 (Aroclor 1260)	<0.035	ug/L	0.12	0.035	1	06/11/20 17:31	06/12/20 19:00	11096-82-5	
PCB-1262 (Aroclor 1262)	<0.036	ug/L	0.12	0.036	1	06/11/20 17:31	06/12/20 19:00	37324-23-5	
PCB-1268 (Aroclor 1268)	<0.045	ug/L	0.15	0.045	1	06/11/20 17:31	06/12/20 19:00	11100-14-4	
Surrogates									
Tetrachloro-m-xylene (S)	64	%	30-134		1	06/11/20 17:31	06/12/20 19:00	877-09-8	
Decachlorobiphenyl (S)	64	%	30-150		1	06/11/20 17:31	06/12/20 19:00	2051-24-3	

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ANALYTICAL RESULTS

Project: 069638.00.055 SHEBOYGAN RIVER
Pace Project No.: 40209148

Sample: MW-10 **Lab ID: 40209148002** Collected: 06/09/20 10:25 Received: 06/09/20 14:40 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB									
Analytical Method: EPA 8082 Preparation Method: EPA Mod. 3510C									
Pace Analytical Services - Minneapolis									
PCB-1016 (Aroclor 1016)	<0.041	ug/L	0.14	0.041	1	06/11/20 17:31	06/12/20 18:12	12674-11-2	
PCB-1221 (Aroclor 1221)	<0.042	ug/L	0.14	0.042	1	06/11/20 17:31	06/12/20 18:12	11104-28-2	
PCB-1232 (Aroclor 1232)	<0.036	ug/L	0.12	0.036	1	06/11/20 17:31	06/12/20 18:12	11141-16-5	
PCB-1242 (Aroclor 1242)	<0.037	ug/L	0.12	0.037	1	06/11/20 17:31	06/12/20 18:12	53469-21-9	
PCB-1248 (Aroclor 1248)	<0.040	ug/L	0.13	0.040	1	06/11/20 17:31	06/12/20 18:12	12672-29-6	
PCB-1254 (Aroclor 1254)	<0.041	ug/L	0.14	0.041	1	06/11/20 17:31	06/12/20 18:12	11097-69-1	
PCB-1260 (Aroclor 1260)	<0.035	ug/L	0.12	0.035	1	06/11/20 17:31	06/12/20 18:12	11096-82-5	
PCB-1262 (Aroclor 1262)	<0.036	ug/L	0.12	0.036	1	06/11/20 17:31	06/12/20 18:12	37324-23-5	
PCB-1268 (Aroclor 1268)	<0.045	ug/L	0.15	0.045	1	06/11/20 17:31	06/12/20 18:12	11100-14-4	
Surrogates									
Tetrachloro-m-xylene (S)	51	%	30-134		1	06/11/20 17:31	06/12/20 18:12	877-09-8	
Decachlorobiphenyl (S)	61	%	30-150		1	06/11/20 17:31	06/12/20 18:12	2051-24-3	

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ANALYTICAL RESULTS

Project: 069638.00.055 SHEBOYGAN RIVER
Pace Project No.: 40209148

Sample: MW-12 **Lab ID: 40209148003** Collected: 06/09/20 09:30 Received: 06/09/20 14:40 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB									
Analytical Method: EPA 8082 Preparation Method: EPA Mod. 3510C									
Pace Analytical Services - Minneapolis									
PCB-1016 (Aroclor 1016)	<0.041	ug/L	0.14	0.041	1	06/11/20 17:31	06/12/20 17:57	12674-11-2	
PCB-1221 (Aroclor 1221)	<0.042	ug/L	0.14	0.042	1	06/11/20 17:31	06/12/20 17:57	11104-28-2	
PCB-1232 (Aroclor 1232)	<0.035	ug/L	0.12	0.035	1	06/11/20 17:31	06/12/20 17:57	11141-16-5	
PCB-1242 (Aroclor 1242)	<0.036	ug/L	0.12	0.036	1	06/11/20 17:31	06/12/20 17:57	53469-21-9	
PCB-1248 (Aroclor 1248)	<0.039	ug/L	0.13	0.039	1	06/11/20 17:31	06/12/20 17:57	12672-29-6	
PCB-1254 (Aroclor 1254)	<0.041	ug/L	0.14	0.041	1	06/11/20 17:31	06/12/20 17:57	11097-69-1	
PCB-1260 (Aroclor 1260)	<0.034	ug/L	0.11	0.034	1	06/11/20 17:31	06/12/20 17:57	11096-82-5	
PCB-1262 (Aroclor 1262)	<0.035	ug/L	0.12	0.035	1	06/11/20 17:31	06/12/20 17:57	37324-23-5	
PCB-1268 (Aroclor 1268)	<0.044	ug/L	0.15	0.044	1	06/11/20 17:31	06/12/20 17:57	11100-14-4	
Surrogates									
Tetrachloro-m-xylene (S)	67	%	30-134		1	06/11/20 17:31	06/12/20 17:57	877-09-8	
Decachlorobiphenyl (S)	65	%	30-150		1	06/11/20 17:31	06/12/20 17:57	2051-24-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 069638.00.055 SHEBOYGAN RIVER
Pace Project No.: 40209148

Sample: MW-13 **Lab ID: 40209148004** Collected: 06/09/20 12:15 Received: 06/09/20 14:40 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB									
Analytical Method: EPA 8082 Preparation Method: EPA Mod. 3510C									
Pace Analytical Services - Minneapolis									
PCB-1016 (Aroclor 1016)	<0.042	ug/L	0.14	0.042	1	06/11/20 17:31	06/12/20 18:44	12674-11-2	
PCB-1221 (Aroclor 1221)	<0.043	ug/L	0.14	0.043	1	06/11/20 17:31	06/12/20 18:44	11104-28-2	
PCB-1232 (Aroclor 1232)	<0.036	ug/L	0.12	0.036	1	06/11/20 17:31	06/12/20 18:44	11141-16-5	
PCB-1242 (Aroclor 1242)	<0.038	ug/L	0.12	0.038	1	06/11/20 17:31	06/12/20 18:44	53469-21-9	
PCB-1248 (Aroclor 1248)	0.42	ug/L	0.13	0.040	1	06/11/20 17:31	06/12/20 18:44	12672-29-6	
PCB-1254 (Aroclor 1254)	<0.042	ug/L	0.14	0.042	1	06/11/20 17:31	06/12/20 18:44	11097-69-1	
PCB-1260 (Aroclor 1260)	<0.036	ug/L	0.12	0.036	1	06/11/20 17:31	06/12/20 18:44	11096-82-5	
PCB-1262 (Aroclor 1262)	<0.036	ug/L	0.12	0.036	1	06/11/20 17:31	06/12/20 18:44	37324-23-5	
PCB-1268 (Aroclor 1268)	<0.046	ug/L	0.15	0.046	1	06/11/20 17:31	06/12/20 18:44	11100-14-4	
Surrogates									
Tetrachloro-m-xylene (S)	70	%	30-134		1	06/11/20 17:31	06/12/20 18:44	877-09-8	
Decachlorobiphenyl (S)	72	%	30-150		1	06/11/20 17:31	06/12/20 18:44	2051-24-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 069638.00.055 SHEBOYGAN RIVER

Pace Project No.: 40209148

Sample: MW-16 **Lab ID: 40209148005** Collected: 06/09/20 11:15 Received: 06/09/20 14:40 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB									
Analytical Method: EPA 8082 Preparation Method: EPA Mod. 3510C									
Pace Analytical Services - Minneapolis									
PCB-1016 (Aroclor 1016)	<0.041	ug/L	0.14	0.041	1	06/11/20 17:31	06/12/20 18:28	12674-11-2	
PCB-1221 (Aroclor 1221)	<0.043	ug/L	0.14	0.043	1	06/11/20 17:31	06/12/20 18:28	11104-28-2	
PCB-1232 (Aroclor 1232)	<0.036	ug/L	0.12	0.036	1	06/11/20 17:31	06/12/20 18:28	11141-16-5	
PCB-1242 (Aroclor 1242)	<0.037	ug/L	0.12	0.037	1	06/11/20 17:31	06/12/20 18:28	53469-21-9	
PCB-1248 (Aroclor 1248)	<0.040	ug/L	0.13	0.040	1	06/11/20 17:31	06/12/20 18:28	12672-29-6	
PCB-1254 (Aroclor 1254)	0.097J	ug/L	0.14	0.042	1	06/11/20 17:31	06/12/20 18:28	11097-69-1	
PCB-1260 (Aroclor 1260)	<0.035	ug/L	0.12	0.035	1	06/11/20 17:31	06/12/20 18:28	11096-82-5	
PCB-1262 (Aroclor 1262)	<0.036	ug/L	0.12	0.036	1	06/11/20 17:31	06/12/20 18:28	37324-23-5	
PCB-1268 (Aroclor 1268)	<0.045	ug/L	0.15	0.045	1	06/11/20 17:31	06/12/20 18:28	11100-14-4	
Surrogates									
Tetrachloro-m-xylene (S)	67	%	30-134		1	06/11/20 17:31	06/12/20 18:28	877-09-8	
Decachlorobiphenyl (S)	71	%	30-150		1	06/11/20 17:31	06/12/20 18:28	2051-24-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 069638.00.055 SHEBOYGAN RIVER
Pace Project No.: 40209148

Sample: MW-17 **Lab ID: 40209148006** Collected: 06/09/20 08:30 Received: 06/09/20 14:40 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB									
Analytical Method: EPA 8082 Preparation Method: EPA Mod. 3510C									
Pace Analytical Services - Minneapolis									
PCB-1016 (Aroclor 1016)	<0.041	ug/L	0.14	0.041	1	06/11/20 17:31	06/12/20 17:41	12674-11-2	
PCB-1221 (Aroclor 1221)	<0.043	ug/L	0.14	0.043	1	06/11/20 17:31	06/12/20 17:41	11104-28-2	
PCB-1232 (Aroclor 1232)	<0.036	ug/L	0.12	0.036	1	06/11/20 17:31	06/12/20 17:41	11141-16-5	
PCB-1242 (Aroclor 1242)	<0.037	ug/L	0.12	0.037	1	06/11/20 17:31	06/12/20 17:41	53469-21-9	
PCB-1248 (Aroclor 1248)	<0.040	ug/L	0.13	0.040	1	06/11/20 17:31	06/12/20 17:41	12672-29-6	
PCB-1254 (Aroclor 1254)	<0.042	ug/L	0.14	0.042	1	06/11/20 17:31	06/12/20 17:41	11097-69-1	
PCB-1260 (Aroclor 1260)	<0.035	ug/L	0.12	0.035	1	06/11/20 17:31	06/12/20 17:41	11096-82-5	
PCB-1262 (Aroclor 1262)	<0.036	ug/L	0.12	0.036	1	06/11/20 17:31	06/12/20 17:41	37324-23-5	
PCB-1268 (Aroclor 1268)	<0.045	ug/L	0.15	0.045	1	06/11/20 17:31	06/12/20 17:41	11100-14-4	
Surrogates									
Tetrachloro-m-xylene (S)	57	%	30-134		1	06/11/20 17:31	06/12/20 17:41	877-09-8	
Decachlorobiphenyl (S)	64	%	30-150		1	06/11/20 17:31	06/12/20 17:41	2051-24-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 069638.00.055 SHEBOYGAN RIVER

Pace Project No.: 40209148

Sample: DUPLICATE GW **Lab ID: 40209148007** Collected: 06/09/20 00:00 Received: 06/09/20 14:40 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB									
Analytical Method: EPA 8082 Preparation Method: EPA Mod. 3510C									
Pace Analytical Services - Minneapolis									
PCB-1016 (Aroclor 1016)	<0.041	ug/L	0.14	0.041	1	06/11/20 17:31	06/12/20 17:25	12674-11-2	
PCB-1221 (Aroclor 1221)	<0.042	ug/L	0.14	0.042	1	06/11/20 17:31	06/12/20 17:25	11104-28-2	
PCB-1232 (Aroclor 1232)	<0.036	ug/L	0.12	0.036	1	06/11/20 17:31	06/12/20 17:25	11141-16-5	
PCB-1242 (Aroclor 1242)	<0.037	ug/L	0.12	0.037	1	06/11/20 17:31	06/12/20 17:25	53469-21-9	
PCB-1248 (Aroclor 1248)	<0.040	ug/L	0.13	0.040	1	06/11/20 17:31	06/12/20 17:25	12672-29-6	
PCB-1254 (Aroclor 1254)	<0.041	ug/L	0.14	0.041	1	06/11/20 17:31	06/12/20 17:25	11097-69-1	
PCB-1260 (Aroclor 1260)	<0.035	ug/L	0.12	0.035	1	06/11/20 17:31	06/12/20 17:25	11096-82-5	
PCB-1262 (Aroclor 1262)	<0.036	ug/L	0.12	0.036	1	06/11/20 17:31	06/12/20 17:25	37324-23-5	
PCB-1268 (Aroclor 1268)	<0.045	ug/L	0.15	0.045	1	06/11/20 17:31	06/12/20 17:25	11100-14-4	
Surrogates									
Tetrachloro-m-xylene (S)	61	%	30-134		1	06/11/20 17:31	06/12/20 17:25	877-09-8	
Decachlorobiphenyl (S)	58	%	30-150		1	06/11/20 17:31	06/12/20 17:25	2051-24-3	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 069638.00.055 SHEBOYGAN RIVER
Pace Project No.: 40209148

QC Batch: 680611	Analysis Method: EPA 8082
QC Batch Method: EPA Mod. 3510C	Analysis Description: 8082 GCS PCB
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 40209148001, 40209148002, 40209148003, 40209148004, 40209148005, 40209148006, 40209148007

METHOD BLANK: 3641925 Matrix: Water
Associated Lab Samples: 40209148001, 40209148002, 40209148003, 40209148004, 40209148005, 40209148006, 40209148007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	<0.042	0.14	06/12/20 15:50	
PCB-1221 (Aroclor 1221)	ug/L	<0.043	0.14	06/12/20 15:50	
PCB-1232 (Aroclor 1232)	ug/L	<0.036	0.12	06/12/20 15:50	
PCB-1242 (Aroclor 1242)	ug/L	<0.038	0.12	06/12/20 15:50	
PCB-1248 (Aroclor 1248)	ug/L	<0.040	0.13	06/12/20 15:50	
PCB-1254 (Aroclor 1254)	ug/L	<0.042	0.14	06/12/20 15:50	
PCB-1260 (Aroclor 1260)	ug/L	<0.036	0.12	06/12/20 15:50	
PCB-1262 (Aroclor 1262)	ug/L	<0.036	0.12	06/12/20 15:50	
PCB-1268 (Aroclor 1268)	ug/L	<0.046	0.15	06/12/20 15:50	
Decachlorobiphenyl (S)	%	60	30-150	06/12/20 15:50	
Tetrachloro-m-xylene (S)	%	49	30-134	06/12/20 15:50	

LABORATORY CONTROL SAMPLE: 3641926

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	2	1.4	69	30-125	
PCB-1260 (Aroclor 1260)	ug/L	2	1.4	70	35-125	
Decachlorobiphenyl (S)	%			77	30-150	
Tetrachloro-m-xylene (S)	%			66	30-134	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3641927 3641928

Parameter	Units	10521146001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result							
PCB-1016 (Aroclor 1016)	ug/L	ND	2	2	1.4	1.3	68	66	30-150	3	30	
PCB-1260 (Aroclor 1260)	ug/L	ND	2	2	1.4	1.4	72	72	30-150	1	30	
Decachlorobiphenyl (S)	%						75	69	30-150			
Tetrachloro-m-xylene (S)	%						64	56	30-134			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 069638.00.055 SHEBOYGAN RIVER

Pace Project No.: 40209148

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

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 at or above the adjusted LOD.

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 069638.00.055 SHEBOYGAN RIVER
Pace Project No.: 40209148

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40209148001	MW-9	EPA Mod. 3510C	680611	EPA 8082	680767
40209148002	MW-10	EPA Mod. 3510C	680611	EPA 8082	680767
40209148003	MW-12	EPA Mod. 3510C	680611	EPA 8082	680767
40209148004	MW-13	EPA Mod. 3510C	680611	EPA 8082	680767
40209148005	MW-16	EPA Mod. 3510C	680611	EPA 8082	680767
40209148006	MW-17	EPA Mod. 3510C	680611	EPA 8082	680767
40209148007	DUPLICATE GW	EPA Mod. 3510C	680611	EPA 8082	680767

REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)

Company Name: **SME**
 Branch/Location: **Grand Rapids**
 Project Contact: **Aaron Lambers**
 Phone: **(616) 561-8605**
 Project Number: **069636 00 055**
 Project Name: **Sheboygan City Harbor Superfund Site**
 Project State: **MI**
 Sampled By (Print): **Megan Schauer**
 Sampled By (Sign): *Megan Schauer*
 PO #: _____
 Regulatory Program: _____

Data Package Options
 EPA Level III
 EPA Level IV
 On your sample (billable)
 NOT needed on your sample

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

CLIENT FIELD ID
 PAGE LAB # DATE TIME MATRIX

001	MW-9	6/9/20	1300	GW
002	MW-10	1025		
003	MW-12	0930		
004	MW-13	1215		
005	MW-14	1115		
006	MW-17	0830		
007	DUPLICATE GW			

CHAIN OF CUSTODY



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*Samples to be analyzed at King Capital's Lab

Preservation Codes
 A=Non
 B=HCl
 C=H2SO4
 D=HNO3
 E=DI Water
 F=Methanol
 G=NaOH
 H=Sodium Bisulfate Solution
 I=Sodium Thiosulfate
 J=Other

Filtered?
 (YES/NO)
Preservation
 (CODE)*

Analyses Requested
 Y/N
 Pick Letter

PCBS
 A

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
<i>Megan Schauer (Sign)</i>	6/9/20 1301	<i>[Signature]</i>	6/9/20 1301	<i>[Signature]</i>	6/9/20 1440	<i>[Signature]</i>	6/9/20 1440
<i>[Signature]</i>	6/9/20 1440	<i>[Signature]</i>	6/9/20 1440	<i>[Signature]</i>	6/9/20 1440	<i>[Signature]</i>	6/9/20 1440

Quote #: _____
 Mail To Contact: _____
 Mail To Company: _____
 Mail To Address: _____
 Invoice To Contact: _____
 Invoice To Company: _____
 Invoice To Address: _____
 Invoice To Phone: _____
 CLIENT COMMENTS: _____
 LAB COMMENTS (Lab Use Only): _____
 Profile #: _____

PAGE Project No. **41809148**
 Receipt Temp = **20.5** °C
 Sample Receipt pH _____
 Cooler Contact _____
 Present / Not Present _____
 Intact / Not Intact _____

Client Name: SME

Sample Preservation Receipt Form

Project # 40209148

All containers needing preservation have been checked and noted below: Yes No N/A

Lab Lot# of pH paper:

Lab Std #ID of preservation (if pH adjusted):

Initial when completed:

Date/ Time:

Pace Analytical Services, LLC
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Pace Lab #	Glass			Plastic			Vials			Jars			General			VOA Vials (>6mm) *			pH after adjusted	Volume (mL)														
	AG1U	BG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	VG9A	DG9T	VG9U	VG9H	VG9M			VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2		
001																																2.5/5/10	2.5/5/10	
002																																	2.5/5/10	2.5/5/10
003																																	2.5/5/10	2.5/5/10
004																																	2.5/5/10	2.5/5/10
005																																	2.5/5/10	2.5/5/10
006																																	2.5/5/10	2.5/5/10
007																																	2.5/5/10	2.5/5/10
008																																	2.5/5/10	2.5/5/10
009																																	2.5/5/10	2.5/5/10
010																																	2.5/5/10	2.5/5/10
011																																	2.5/5/10	2.5/5/10
012																																	2.5/5/10	2.5/5/10
013																																	2.5/5/10	2.5/5/10
014																																	2.5/5/10	2.5/5/10
015																																	2.5/5/10	2.5/5/10
016																																	2.5/5/10	2.5/5/10
017																																	2.5/5/10	2.5/5/10
018																																	2.5/5/10	2.5/5/10
019																																	2.5/5/10	2.5/5/10
020																																	2.5/5/10	2.5/5/10


Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: NO GPT&O Headspace in VOA Vials (<6mm): Yes No N/A *If yes look in headspace column

AG1U	1 liter amber glass
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG4U	120 mL amber glass unpres
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP3U	250 mL plastic unpres
BP3B	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4


VG9A	40 mL clear ascorbic
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
JG9U	9 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres
SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN	

 1241 Bellevue Street, Green Bay, WI 54302	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: 26Mar2020
	Document No.: ENV-FRM-GBAY-0014-Rev.00	Author: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Client Name: SME
Courier: CS Logistics Fed Ex Speedee UPS Walto
 Client Pace Other: _____

Project #: **WO# : 40209148**

 40209148

Tracking #: _____
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 - N/A **Type of Ice:** Wet Blue Dry None Samples on ice, cooling process has begun
Cooler Temperature Uncorr: 60 / Corr: _____
Temp Blank Present: yes no **Biological Tissue is Frozen:** yes no
 Temp should be above freezing to 6°C.
 Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Person examining contents:
 Date: 6/9/20 Initials: VC
 Labeled By Initials: SMW

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	2. <u>no mail, invoice</u>
Chain of Custody Relinquished:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume:		8.
For Analysis: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No MS/MSD: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		
Correct Containers Used:	<input type="checkbox"/> Yes <input type="checkbox"/> No	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
-Pace IR Containers Used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>W</u>		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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: _____

PM Review is documented electronically in LIMS. By releasing the project, the PM acknowledges they have reviewed the sample logir