

26850 Haggerty Road,
Farmington Hills, Michigan 48331
United States
www.ghd.com



GHD Reference No: 11208058

January 21, 2021

**City of Bay City WWTP
Attn: IPP Coordinator
2905 North Water Street
Bay City, Michigan, 48708**

**Semi-Annual Compliance Report (July 1 to December 31, 2021)
RACER Bay City Industrial Land
Bay City, Michigan**

To Whom It May Concern,

The following letter has been prepared by GHD on behalf of Revitalizing Auto Communities Environmental Response Trust (RACER) in accordance with Part 4 Section 3 of Industrial User (IU) permit No. 120807 as the semi-annual compliance report for the period July 1 to December 31, 2021 for RACER's groundwater extraction and treatment system located at the north end of Crotty Street in Bay City, Michigan (Site).

The groundwater extraction and treatment system operated consistently for the semi-annual period with the exception of short periods when the system was down for maintenance or as a result of an alarm condition.

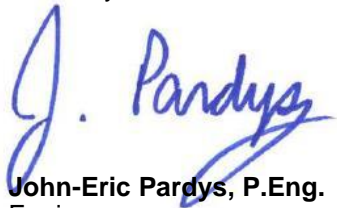
Table 1 presents the results of the required semi-annual effluent sample collected from the RACER groundwater extraction and treatment system on December 23, 2021. Attachment 1 presents a copy of the laboratory analytical report. The analytical results did not identify an exceedance of the daily maximum discharge levels specified in the permit, and there were no other conditions, events or circumstances identified that did not meet other permit requirements. Table 2 presents the flow readings collected periodically from the flow meter.

The RACER groundwater extraction and treatment system is operated and maintained by Steve Hoevemeyer (GHD) who maintains the designation of Waste Treatment Plant Operator – Industrial or Commercial (A-1d Impoundment, A-2b Filtration of Wastewater, B-2c Oil-Water Separation, and B-3b Carbon Adsorption).

See Attachment 2 for the certification statement prepared in accordance with Section 106-23(d) of the Bay City sewer ordinance.

Should you have any questions on the above, please do not hesitate to contact us.

Sincerely,



John-Eric Pardys, P.Eng.
Engineer

+1 519 340-4316
john-eric.pardys@ghd.com

JEP/kf/6

cc: Grant Trigger (RACER)
Dave Favero (RACER)

Encl. Table 1 – Effluent Results Summary
Table 2 – Flow Meter Readings
Attachment 1 - Laboratory Analytical Report
Attachment 2 – Certification Statement

**Analytical Results Summary
Effluent Sampling
Bay City Industrial Land
Bay City, Michigan**

Sample Location:

Sample ID:

Sample Date:

effluent-GWTS

W-11208058-122321-SSH-22021

12/23/21

**Parameters
VOAs****Units****Daily Maximum
(Bay City Industrial
User Permit)**

Vinyl chloride	mg/L	0.002	0.001 U
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Metals

Cadmium	mg/L	0.057	0.002 U
Chromium	mg/L	6.812	0.005 U
Copper	mg/L	1.476	0.010 J
Iron	mg/L		0.42
Lead	mg/L	0.632	0.0026 J B
Mercury	mg/L	ND	0.0002 U *+
Nickel	mg/L	2.548	0.011 J
Silver	mg/L	0.2	0.005 U

Pesticides

Aroclor-1016 (PCB-1016)	mg/L	ND	0.000095 U
Aroclor-1221 (PCB-1221)	mg/L	ND	0.000095 U
Aroclor-1232 (PCB-1232)	mg/L	ND	0.000095 U
Aroclor-1242 (PCB-1242)	mg/L	ND	0.000095 U
Aroclor-1248 (PCB-1248)	mg/L	ND	0.000095 U
Aroclor-1254 (PCB-1254)	mg/L	ND	0.000095 U
Aroclor-1260 (PCB-1260)	mg/L	ND	0.000095 U

Wet

Ammonia	mg/L	30	0.32
Biochemical oxygen demand (BOD)	mg/L	835	2.0 U H H3
Chemical oxygen demand (COD)	mg/L	1670	16
Oil and grease (HEM), polar	mg/L	100	4.8 U
pH, lab	s.u.	6.5 to 11.0	7.7 HF
Phosphorus	mg/L	13.8	0.012
Total suspended solids (TSS)	mg/L	1336	0.50 U

Notes:

HF Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
 U Not detected at the associated reporting limit
 J Estimated value
 B Compound was found in the blank and sample
 H Sample was prepped or analyzed beyond the specified holding time
 H3 Sample was received and analyzed past holding time
 *+ LCS and/or LCSD is outside acceptance limits, high biased

**Flow Meter Readings
Bay City Industrial Land
Bay City, Michigan**

Date	Flow Meter reading (gallons)	Cumulative Total: (gallons)	Volume to be invoiced annually (July to June 30)	Comments
27-Dec-21	553735	1299833		
23-Dec-21				- Collected effluent sample
29-Nov-21	533997	1280095		
27-Sep-21	475843	1221941		
20-Aug-21	436048	1182146		
30-Jul-21	421003	1167101		
23-Jun-21	409045	1155143	139856	- Collected effluent sample and City invoiced for discharge
27-May-21	400420	1146518		
29-Apr-21	397390	1143488		
23-Mar-21	371797	1117895		
22-Feb-21	348776	1094874		
21-Dec-20	308935	1055033		
10-Dec-20				- Collected effluent sample
9-Dec-20	304649	1050747		
12-Oct-20	278099	1024197		
10-Sep-20	277899	1023997		
25-Aug-20	277020	1023118		
22-Jul-20	274190	1020288		
22-Jun-20	270975	1017073		
4-Jun-20	269189	1015287	124809	- City invoiced for discharge
28-May-20	268089	1014187		- Collected effluent sample
28-Apr-20	263922	1010020		
25-Mar-20	248006	994104		
20-Feb-20	227965	974063		
27-Jan-20	220321	966419		
5-Dec-19	200031	946129		- Collected PFAS effluent sample
25-Nov-19	192582	938680		
29-Oct-19	176533	922631		
28-Aug-19	168508	914606		
17-Jul-19	159490	905588		
17-Jun-19	144380	890478	122047	- City invoiced for discharge
31-May-19				- Collected effluent sample
17-May-19	123482	869580		
19-Apr-19	105745	851843		
22-Mar-19	81364	827462		
28-Feb-19	77720	823818		
29-Jan-19	77720	823818		
20-Jan-19				- Collected effluent sample
12-Dec-18	77570	823668		- Collected effluent sample
29-Nov-18	76972	823070		
26-Sep-18	59303	805401		
30-Aug-18	53199	799297		
30-Jul-18	52454	798552		
20-Jun-18	35274	781372		
1-Jun-18				- Collected effluent sample
1-Jun-18	22333	768431	88271	- City invoiced for discharge
31-May-18	20490	766588		
30-Apr-18	18529	764627		
29-Mar-18	11243	757341		
8-Mar-18	122667	746098		- Last reading before
8-Mar-18	0	746098		- New Flow meter installed

Table 2

**Flow Meter Readings
Bay City Industrial Land
Bay City, Michigan**

Date	Flow Meter reading (gallons)	Cumulative Total: (gallons)	Volume to be invoiced annually (July to June 30)	Comments
30-Nov-17				- Collected effluent sample
25-Oct-17	73702	697133		
12-Jul-17	60991	684422		
28-Jun-17	56911	680342		
13-Jun-17	56729	680160	137544	- City invoiced for discharge
22-May-17	56722	680153		
9-May-17				- Collected effluent sample
27-Apr-17	55126	678557		
2-Feb-17	5813	629244		
16-Jan-17				- Collected effluent sample
14-Jan-17	609074	623431		
14-Jan-17	0	623431		
16-Dec-16	609074	623431		
11-Nov-16	608980	623337		
28-Oct-16	608865	623222		
30-Sep-16	607717	622074		
31-Aug-16	607298	621655		
20-Jul-16	561893	576250		
29-Jun-16	556457	570814		
14-Jun-16	528259	542616	523666	- Collected effluent sample,
31-May-16	521920	536277		
27-Apr-16	462204	476561		
21-Mar-16	409836	424193		
29-Feb-16	394550	408907		
10-Feb-16	387410	401767		
30-Dec-15	351550	365907		
10-Dec-15				- Collected effluent sample
23-Nov-15	289731	304088		
30-Oct-15	260771	275128		
29-Sep-15	252638	266995		
28-Aug-15	241397	255754		
29-Jul-15	232315	246672		
30-Jun-15	232315	246672		
25-Jun-15	232315	246672		
18-Jun-15	224490	238847		
6-May-15	197766	212123		
30-Apr-15	175234	189591		
19-Mar-15	67425	81782		
16-Mar-15				- Collected effluent sample
13-Feb-15	46303	60660		
27-Jan-15	31004	45361		
29-Dec-14	31004	45361		
26-Nov-14	31004	45361		
23-Oct-14	31004	45361		
23-Sep-14	11504	25861		
5-Sep-14	6337	20694		- Collected effluent sample
18-Aug-14	4593	18950		
28-Jul-14	4593	18950		
16-Jun-14	4593	18950	18950	- City invoiced for discharge

Attachment 1

Laboratory Analytical Report

ANALYTICAL REPORT

Eurofins Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-131747-1

Client Project/Site: 11208058, RACER Bay City

For:

GHD Services Inc.
26850 Haggerty Rd.
Farmington Hills, Michigan 48331

Attn: Ms. Ruth Mickle



Authorized for release by:
1/11/2022 9:59:17 AM

Denise Heckler, Project Manager II
(330)966-9477

Denise.Heckler@Eurofinset.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions/Glossary	4
Certification Summary	6
Sample Summary	8
Method Summary	9
Lab Chronicle	10
Detection Summary	12
Client Sample Results	13
Surrogate Summary	14
QC Sample Results	15
QC Association Summary	21
Chain of Custody	24
Receipt Checklists	26



Case Narrative

Client: GHD Services Inc.
Project/Site: 11208058, RACER Bay City

Job ID: 180-131747-1

Job ID: 180-131747-1

Laboratory: Eurofins Pittsburgh

Narrative

Job Narrative 180-131747-1

Comments

No additional comments.

Receipt

The sample was received on 12/24/2021 10:00 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 5.0° C.

Receipt Exceptions

Method SM 5210B: The following sample was received outside of holding time: W-11208058-122321-SSH-22021 (180-131747-1)

GC/MS VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

Method 245.1: The laboratory control sample (LCS) for preparation batch 180-383766 and analytical batch 180-384058 recover above the control limits for mercury. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

Method 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 180-383693.

Method 1664B: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of >2: W-11208058-122321-SSH-22021 (180-131747-1). The sample(s) was preserved to the appropriate pH in the laboratory. 5 ml of 6N HCl added.

Method 1664B: The matrix spike (MS) recoveries for preparation batch 180-384584 and analytical batch 180-384587 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 11208058, RACER Bay City

Job ID: 180-131747-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
H3	Sample was received and analyzed past holding time.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Eurofins Pittsburgh

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 11208058, RACER Bay City

Job ID: 180-131747-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TNTC	Too Numerous To Count

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Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: 11208058, RACER Bay City

Job ID: 180-131747-1

Laboratory: Eurofins Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-22
California	State	2891	04-30-22
Connecticut	State	PH-0688	09-30-22
Florida	NELAP	E871008	06-30-22
Georgia	State	PA 02-00416	04-30-22
Illinois	NELAP	004375	06-30-22
Kansas	NELAP	E-10350	01-31-22
Kentucky (UST)	State	162013	04-30-22
Kentucky (WW)	State	KY98043	12-31-21 *
Louisiana	NELAP	04041	06-30-22
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-22
Nevada	State	PA00164	08-31-22
New Hampshire	NELAP	2030	04-05-22
New Jersey	NELAP	PA005	06-30-22
New York	NELAP	11182	04-02-22
North Carolina (WW/SW)	State	434	12-31-22
North Dakota	State	R-227	04-30-22
Oregon	NELAP	PA-2151	02-06-22
Pennsylvania	NELAP	02-00416	04-30-22
Rhode Island	State	LAO00362	12-31-21 *
South Carolina	State	89014	04-30-22
Texas	NELAP	T104704528	03-31-22
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-22
Virginia	NELAP	10043	09-15-22
West Virginia DEP	State	142	01-31-22
Wisconsin	State	998027800	08-31-22

Laboratory: Eurofins Buffalo

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	88-0686	07-06-22
Connecticut	State	PH-0568	09-30-22
Florida	NELAP	E87672	06-30-22
Georgia	State	10026 (NY)	03-31-22
Georgia	State Program	N/A	03-31-09 *
Georgia (DW)	State	956	03-31-22
Illinois	NELAP	200003	09-30-22
Iowa	State	374	03-01-23
Iowa	State Program	374	03-01-09 *
Kansas	NELAP	E-10187	02-02-22
Kentucky (DW)	State	90029	12-31-21 *
Kentucky (UST)	State	30	04-01-22
Kentucky (WW)	State	KY90029	12-31-22
Louisiana	NELAP	02031	06-30-22
Maine	State	NY00044	12-05-22
Maryland	State	294	04-02-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Pittsburgh

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: 11208058, RACER Bay City

Job ID: 180-131747-1

Laboratory: Eurofins Buffalo (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Massachusetts	State	M-NY044	06-30-22
Michigan	State	9937	04-01-22
Michigan	State Program	9937	04-01-09 *
New Hampshire	NELAP	2973	09-11-19 *
New Hampshire	NELAP	2337	11-17-22
New Jersey	NELAP	NY455	06-30-22
New York	NELAP	10026	04-01-22
Oregon	NELAP	NY200003	06-12-22
Pennsylvania	NELAP	68-00281	07-31-22
Rhode Island	State	LAO00328	12-31-21 *
Tennessee	State	02970	03-31-22
Texas	NELAP	T104704412-18-10	07-31-22
USDA	US Federal Programs	P330-18-00039	03-25-24
Virginia	NELAP	460185	09-14-22
Washington	State	C784	02-10-22
Wisconsin	State	998310390	08-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Pittsburgh

Sample Summary

Client: GHD Services Inc.
Project/Site: 11208058, RACER Bay City

Job ID: 180-131747-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-131747-1	W-11208058-122321-SSH-22021	Water	12/23/21 11:30	12/27/21 08:30

- 1
- 2
- 3
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- 14
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Method Summary

Client: GHD Services Inc.
Project/Site: 11208058, RACER Bay City

Job ID: 180-131747-1

Method	Method Description	Protocol	Laboratory
EPA 624.1	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL PIT
EPA 608.3	Polychlorinated Biphenyls (PCBs) (GC)	40CFR136A	TAL PIT
EPA 200.7 Rev 4	Metals (ICP)	EPA	TAL PIT
EPA 245.1 Rev.	Mercury (CVAA)	EPA	TAL PIT
EPA 1664B	HEM and SGT-HEM	EPA	TAL PIT
EPA 350.1	Nitrogen, Ammonia	EPA	TAL PIT
EPA 410.4	COD	MCAWW	TAL PIT
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL PIT
SM 4500 H+ B	pH	SM	TAL PIT
SM 4500 P E	Phosphorus	SM	TAL BUF
SM 5210B	5 Day BOD test	SM	TAL PIT
1664B	HEM and SGT-HEM (SPE)	1664B	TAL PIT
200.7	Preparation, Total Recoverable Metals	EPA	TAL PIT
245.1	Preparation, Mercury	EPA	TAL PIT
410.4	COD	MCAWW	TAL PIT
608	Liquid-Liquid Extraction (Separatory Funnel)	40CFR136A	TAL PIT

Protocol References:

1664B = EPA-821-98-002

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 11208058, RACER Bay City

Job ID: 180-131747-1

Client Sample ID: W-11208058-122321-SSH-22021

Lab Sample ID: 180-131747-1

Date Collected: 12/23/21 11:30

Matrix: Water

Date Received: 12/27/21 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 624.1		1	5 mL	5 mL	383913	12/31/21 22:53	PJJ	TAL PIT
	Instrument ID: CHHP6									
Total/NA	Prep	608			1050 mL	1.0 mL	383693	12/29/21 08:00	SNP	TAL PIT
Total/NA	Analysis	EPA 608.3		1			384070	01/04/22 11:02	JMO	TAL PIT
	Instrument ID: CHGC20									
Total Recoverable	Prep	200.7			25 mL	25 mL	383533	12/28/21 13:40	KFS	TAL PIT
Total Recoverable	Analysis	EPA 200.7 Rev 4		1			383759	12/29/21 22:16	RJG	TAL PIT
	Instrument ID: C									
Total/NA	Prep	245.1			25 mL	25 mL	383766	12/30/21 06:56	RJR	TAL PIT
Total/NA	Analysis	EPA 245.1 Rev.		1			384058	01/03/22 14:12	RJR	TAL PIT
	Instrument ID: HGY									
Total/NA	Prep	1664B			1050 mL	1000 mL	384584	01/07/22 15:30	SMV	TAL PIT
Total/NA	Analysis	EPA 1664B		1			384587	01/08/22 01:06	CTM	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	EPA 350.1		1			384161	01/04/22 12:48	SNR	TAL PIT
	Instrument ID: BLUE-ASTORIA									
Total/NA	Prep	410.4			1 mL	1 mL	383847	12/30/21 11:48	ELS	TAL PIT
Total/NA	Analysis	EPA 410.4		1	1 mL	1 mL	383868	12/30/21 16:20	ELS	TAL PIT
	Instrument ID: GENESYS10S									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	383662	12/29/21 08:52	BAC	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 4500 H+ B		1			383680	12/29/21 10:24	MJH	TAL PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 4500 P E		1	5 mL	5 mL	611278	01/10/22 12:55	KEB	TAL BUF
	Instrument ID: Genesys Spec 30									
Total/NA	Analysis	SM 5210B		1	300 mL	300 mL	384048	12/29/21 19:03	ELS	TAL PIT
	Instrument ID: NOEQUIP									

Laboratory References:

TAL BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 11208058, RACER Bay City

Job ID: 180-131747-1

Analyst References:

- Lab: TAL BUF
 - Batch Type: Analysis
 - KEB = Katherine Bauer
- Lab: TAL PIT
 - Batch Type: Prep
 - ELS = Edwin Shireman
 - KFS = Kelly Shannon
 - RJR = Ron Rosenbaum
 - SMV = Sarah Vander Wagen
 - SNP = Sydney Prugh
 - Batch Type: Analysis
 - BAC = Blase Cindric
 - CTM = Connor Mitsch
 - ELS = Edwin Shireman
 - JMO = John Oravec
 - MJH = Michael Houde
 - PJJ = Patrick Journet
 - RJG = Rob Good
 - RJR = Ron Rosenbaum
 - SNR = Sabra Richart

1
2
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9
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14
15

Detection Summary

Client: GHD Services Inc.
Project/Site: 11208058, RACER Bay City

Job ID: 180-131747-1

Client Sample ID: W-11208058-122321-SSH-22021

Lab Sample ID: 180-131747-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	10	J	20	3.9	ug/L	1		EPA 200.7 Rev 4	Total Recoverable
Iron	420		100	73	ug/L	1		EPA 200.7 Rev 4	Total Recoverable
Nickel	11	J	20	2.1	ug/L	1		EPA 200.7 Rev 4	Total Recoverable
Lead	2.6	J B	3.0	2.3	ug/L	1		EPA 200.7 Rev 4	Total Recoverable
Ammonia	0.32		0.10	0.088	mg/L	1		EPA 350.1	Total/NA
Chemical Oxygen Demand	16		10	9.1	mg/L	1		EPA 410.4	Total/NA
pH	7.7	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Phosphorus	0.012		0.010	0.0050	mg/L	1		SM 4500 P E	Total/NA

This Detection Summary does not include radiochemical test results.

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Client Sample Results

Client: GHD Services Inc.
Project/Site: 11208058, RACER Bay City

Job ID: 180-131747-1

Client Sample ID: W-11208058-122321-SSH-22021

Lab Sample ID: 180-131747-1

Date Collected: 12/23/21 11:30

Matrix: Water

Date Received: 12/27/21 08:30

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	1.0	U	1.0	0.40	ug/L			12/31/21 22:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	78		28 - 163					12/31/21 22:53	1
4-Bromofluorobenzene (Surr)	81		41 - 122					12/31/21 22:53	1
Toluene-d8 (Surr)	94		53 - 125					12/31/21 22:53	1
Dibromofluoromethane (Surr)	91		59 - 168					12/31/21 22:53	1

Method: EPA 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.0095	U	0.0095	0.0045	ug/L		12/29/21 08:00	01/04/22 11:02	1
PCB-1221	0.0095	U	0.0095	0.0054	ug/L		12/29/21 08:00	01/04/22 11:02	1
PCB-1232	0.0095	U	0.0095	0.0050	ug/L		12/29/21 08:00	01/04/22 11:02	1
PCB-1242	0.0095	U	0.0095	0.0087	ug/L		12/29/21 08:00	01/04/22 11:02	1
PCB-1248	0.0095	U	0.0095	0.0028	ug/L		12/29/21 08:00	01/04/22 11:02	1
PCB-1254	0.0095	U	0.0095	0.0091	ug/L		12/29/21 08:00	01/04/22 11:02	1
PCB-1260	0.0095	U	0.0095	0.0037	ug/L		12/29/21 08:00	01/04/22 11:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene (Surr)	79		20 - 138				12/29/21 08:00	01/04/22 11:02	1
Tetrachloro-m-xylene (Surr)	74		20 - 138				12/29/21 08:00	01/04/22 11:02	1
DCB Decachlorobiphenyl (Surr)	108		43 - 143				12/29/21 08:00	01/04/22 11:02	1
DCB Decachlorobiphenyl (Surr)	84		43 - 143				12/29/21 08:00	01/04/22 11:02	1

Method: EPA 200.7 Rev 4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	5.0	U	5.0	0.87	ug/L		12/28/21 13:40	12/29/21 22:16	1
Cadmium	2.0	U	2.0	0.33	ug/L		12/28/21 13:40	12/29/21 22:16	1
Chromium	5.0	U	5.0	2.6	ug/L		12/28/21 13:40	12/29/21 22:16	1
Copper	10	J	20	3.9	ug/L		12/28/21 13:40	12/29/21 22:16	1
Iron	420		100	73	ug/L		12/28/21 13:40	12/29/21 22:16	1
Nickel	11	J	20	2.1	ug/L		12/28/21 13:40	12/29/21 22:16	1
Lead	2.6	J B	3.0	2.3	ug/L		12/28/21 13:40	12/29/21 22:16	1

Method: EPA 245.1 Rev. - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U **	0.20	0.13	ug/L		12/30/21 06:56	01/03/22 14:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	4.8	U	4.8	4.1	mg/L		01/07/22 15:30	01/08/22 01:06	1
Ammonia	0.32		0.10	0.088	mg/L			01/04/22 12:48	1
Chemical Oxygen Demand	16		10	9.1	mg/L		12/30/21 11:48	12/30/21 16:20	1
Total Suspended Solids	0.50	U	0.50	0.50	mg/L			12/29/21 08:52	1
pH	7.7	HF	0.1	0.1	SU			12/29/21 10:24	1
Phosphorus	0.012		0.010	0.0050	mg/L			01/10/22 12:55	1
Biochemical Oxygen Demand	2.0	U H H3	2.0	2.0	mg/L			12/29/21 19:03	1

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Surrogate Summary

Client: GHD Services Inc.
Project/Site: 11208058, RACER Bay City

Job ID: 180-131747-1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (28-163)	BFB (41-122)	TOL (53-125)	DBFM (59-168)
180-131747-1	W-11208058-122321-SSH-2202	78	81	94	91
180-131747-1 MS	W-11208058-122321-SSH-22021	70	90	84	91
180-131747-1 MSD	W-11208058-122321-SSH-22021	83	97	90	98
LCS 180-383913/3	Lab Control Sample	74	92	92	90
MB 180-383913/7	Method Blank	74	83	93	85

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

Method: EPA 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TCX1 (20-138)	TCX2 (20-138)	DCB1 (43-143)	DCB2 (43-143)
180-131747-1	W-11208058-122321-SSH-2202	79	74	108	84
LCS 180-383693/4-A	Lab Control Sample	90	86	101	91
LCSD 180-383693/5-A	Lab Control Sample Dup	94	88	100	87
MB 180-383693/1-A	Method Blank	71	77	92	80

Surrogate Legend

TCX = Tetrachloro-m-xylene (Surr)

DCB = DCB Decachlorobiphenyl (Surr)

QC Sample Results

Client: GHD Services Inc.
Project/Site: 11208058, RACER Bay City

Job ID: 180-131747-1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-383913/7

Matrix: Water

Analysis Batch: 383913

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	1.0	U	1.0	0.40	ug/L			12/31/21 15:52	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	74		28 - 163					12/31/21 15:52	1
4-Bromofluorobenzene (Surr)	83		41 - 122					12/31/21 15:52	1
Toluene-d8 (Surr)	93		53 - 125					12/31/21 15:52	1
Dibromofluoromethane (Surr)	85		59 - 168					12/31/21 15:52	1

Lab Sample ID: LCS 180-383913/3

Matrix: Water

Analysis Batch: 383913

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	10.0	10.2		ug/L		102	10 - 170
Surrogate	%Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	74		28 - 163				
4-Bromofluorobenzene (Surr)	92		41 - 122				
Toluene-d8 (Surr)	92		53 - 125				
Dibromofluoromethane (Surr)	90		59 - 168				

Lab Sample ID: 180-131747-1 MS

Matrix: Water

Analysis Batch: 383913

Client Sample ID: W-11208058-122321-SSH-22021

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	1.0	U	10.0	9.49		ug/L		95	10 - 170
Surrogate	%Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	70		28 - 163						
4-Bromofluorobenzene (Surr)	90		41 - 122						
Toluene-d8 (Surr)	84		53 - 125						
Dibromofluoromethane (Surr)	91		59 - 168						

Lab Sample ID: 180-131747-1 MSD

Matrix: Water

Analysis Batch: 383913

Client Sample ID: W-11208058-122321-SSH-22021

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Vinyl chloride	1.0	U	10.0	10.5		ug/L		105	10 - 170	10	35
Surrogate	%Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	83		28 - 163								
4-Bromofluorobenzene (Surr)	97		41 - 122								
Toluene-d8 (Surr)	90		53 - 125								
Dibromofluoromethane (Surr)	98		59 - 168								

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11208058, RACER Bay City

Job ID: 180-131747-1

Method: EPA 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 180-383693/1-A

Matrix: Water

Analysis Batch: 384070

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 383693

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.010	U	0.010	0.0048	ug/L		12/29/21 08:00	01/04/22 09:47	1
PCB-1221	0.010	U	0.010	0.0057	ug/L		12/29/21 08:00	01/04/22 09:47	1
PCB-1232	0.010	U	0.010	0.0052	ug/L		12/29/21 08:00	01/04/22 09:47	1
PCB-1242	0.010	U	0.010	0.0091	ug/L		12/29/21 08:00	01/04/22 09:47	1
PCB-1248	0.010	U	0.010	0.0030	ug/L		12/29/21 08:00	01/04/22 09:47	1
PCB-1254	0.010	U	0.010	0.0095	ug/L		12/29/21 08:00	01/04/22 09:47	1
PCB-1260	0.010	U	0.010	0.0039	ug/L		12/29/21 08:00	01/04/22 09:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene (Surr)	71		20 - 138	12/29/21 08:00	01/04/22 09:47	1
Tetrachloro-m-xylene (Surr)	77		20 - 138	12/29/21 08:00	01/04/22 09:47	1
DCB Decachlorobiphenyl (Surr)	92		43 - 143	12/29/21 08:00	01/04/22 09:47	1
DCB Decachlorobiphenyl (Surr)	80		43 - 143	12/29/21 08:00	01/04/22 09:47	1

Lab Sample ID: LCS 180-383693/4-A

Matrix: Water

Analysis Batch: 384070

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 383693

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
PCB-1016	1.00	0.674		ug/L		67	50 - 140
PCB-1260	1.00	0.870		ug/L		87	10 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene (Surr)	90		20 - 138
Tetrachloro-m-xylene (Surr)	86		20 - 138
DCB Decachlorobiphenyl (Surr)	101		43 - 143
DCB Decachlorobiphenyl (Surr)	91		43 - 143

Lab Sample ID: LCSD 180-383693/5-A

Matrix: Water

Analysis Batch: 384070

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 383693

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
PCB-1016	1.00	0.693		ug/L		69	50 - 140	3	35
PCB-1260	1.00	0.880		ug/L		88	10 - 140	1	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Tetrachloro-m-xylene (Surr)	94		20 - 138
Tetrachloro-m-xylene (Surr)	88		20 - 138
DCB Decachlorobiphenyl (Surr)	100		43 - 143
DCB Decachlorobiphenyl (Surr)	87		43 - 143

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11208058, RACER Bay City

Job ID: 180-131747-1

Method: EPA 200.7 Rev 4 - Metals (ICP)

Lab Sample ID: MB 180-383533/1-A
Matrix: Water
Analysis Batch: 383759

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 383533

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	5.0	U	5.0	0.87	ug/L		12/28/21 13:40	12/29/21 21:30	1
Cadmium	2.0	U	2.0	0.33	ug/L		12/28/21 13:40	12/29/21 21:30	1
Chromium	5.0	U	5.0	2.6	ug/L		12/28/21 13:40	12/29/21 21:30	1
Copper	20	U	20	3.9	ug/L		12/28/21 13:40	12/29/21 21:30	1
Iron	100	U	100	73	ug/L		12/28/21 13:40	12/29/21 21:30	1
Nickel	20	U	20	2.1	ug/L		12/28/21 13:40	12/29/21 21:30	1
Lead	2.99	J	3.0	2.3	ug/L		12/28/21 13:40	12/29/21 21:30	1

Lab Sample ID: LCS 180-383533/2-A
Matrix: Water
Analysis Batch: 383759

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 383533

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	250	261		ug/L		104	85 - 115
Cadmium	500	519		ug/L		104	85 - 115
Chromium	500	495		ug/L		99	85 - 115
Copper	500	521		ug/L		104	85 - 115
Iron	5000	5030		ug/L		101	85 - 115
Nickel	500	506		ug/L		101	85 - 115
Lead	500	496		ug/L		99	85 - 115

Method: EPA 245.1 Rev. - Mercury (CVAA)

Lab Sample ID: MB 180-383766/1-A
Matrix: Water
Analysis Batch: 384058

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 383766

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.13	ug/L		12/30/21 06:56	01/03/22 13:57	1

Lab Sample ID: LCS 180-383766/2-A
Matrix: Water
Analysis Batch: 384058

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 383766

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	2.50	3.11	*+	ug/L		124	85 - 115

Method: EPA 1664B - HEM and SGT-HEM

Lab Sample ID: MB 180-384584/1-A
Matrix: Water
Analysis Batch: 384587

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 384584

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	5.0	U	5.0	4.3	mg/L		01/07/22 15:30	01/08/22 01:06	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11208058, RACER Bay City

Job ID: 180-131747-1

Method: EPA 1664B - HEM and SGT-HEM (Continued)

Lab Sample ID: LCS 180-384584/2-A
Matrix: Water
Analysis Batch: 384587

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 384584

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM (Oil & Grease)	39.8	34.50		mg/L		87	78 - 114

Method: EPA 350.1 - Nitrogen, Ammonia

Lab Sample ID: LB 180-383997/1-A
Matrix: Water
Analysis Batch: 384161

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.10	U	0.10	0.088	mg/L			01/04/22 12:36	1

Lab Sample ID: MB 180-384161/17
Matrix: Water
Analysis Batch: 384161

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.10	U	0.10	0.088	mg/L			01/04/22 12:24	1

Lab Sample ID: LCS 180-384161/18
Matrix: Water
Analysis Batch: 384161

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	0.500	0.516		mg/L		103	90 - 110

Method: EPA 410.4 - COD

Lab Sample ID: MB 180-383847/12-A
Matrix: Water
Analysis Batch: 383868

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 383847

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	10	U	10	9.1	mg/L		12/30/21 11:48	12/30/21 15:50	1

Lab Sample ID: MB 180-383847/36-A
Matrix: Water
Analysis Batch: 383868

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 383847

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	10	U	10	9.1	mg/L		12/30/21 11:48	12/30/21 16:10	1

Lab Sample ID: LCS 180-383847/35-A
Matrix: Water
Analysis Batch: 383868

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 383847

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	75.0	72.1		mg/L		96	90 - 110

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11208058, RACER Bay City

Job ID: 180-131747-1

Method: EPA 410.4 - COD (Continued)

Lab Sample ID: 180-131747-1 MS

Matrix: Water

Analysis Batch: 383868

Client Sample ID: W-11208058-122321-SSH-22021

Prep Type: Total/NA

Prep Batch: 383847

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	16		25.0	39.0		mg/L		92	90 - 110

Lab Sample ID: 180-131747-1 MSD

Matrix: Water

Analysis Batch: 383868

Client Sample ID: W-11208058-122321-SSH-22021

Prep Type: Total/NA

Prep Batch: 383847

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	16		25.0	43.3		mg/L		109	90 - 110	10	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 180-383662/2

Matrix: Water

Analysis Batch: 383662

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	0.50	U	0.50	0.50	mg/L			12/29/21 08:52	1

Lab Sample ID: LCS 180-383662/1

Matrix: Water

Analysis Batch: 383662

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	29.0	28.0		mg/L		97	85 - 115

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 180-383680/1

Matrix: Water

Analysis Batch: 383680

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

Method: SM 4500 P E - Phosphorus

Lab Sample ID: MB 480-611278/3

Matrix: Water

Analysis Batch: 611278

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus	0.010	U	0.010	0.0050	mg/L			01/10/22 12:55	1

Lab Sample ID: LCS 480-611278/4

Matrix: Water

Analysis Batch: 611278

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phosphorus	0.200	0.205		mg/L		103	90 - 110

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11208058, RACER Bay City

Job ID: 180-131747-1

Method: SM 5210B - 5 Day BOD test

Lab Sample ID: USB 180-384048/1

Matrix: Water

Analysis Batch: 384048

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	2.0	U	2.0	2.0	mg/L			12/29/21 17:28	1

Lab Sample ID: LCS 180-384048/2

Matrix: Water

Analysis Batch: 384048

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Biochemical Oxygen Demand	198	202		mg/L		102	85 - 115

QC Association Summary

Client: GHD Services Inc.
Project/Site: 11208058, RACER Bay City

Job ID: 180-131747-1

GC/MS VOA

Analysis Batch: 383913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131747-1	W-11208058-122321-SSH-22021	Total/NA	Water	EPA 624.1	
MB 180-383913/7	Method Blank	Total/NA	Water	EPA 624.1	
LCS 180-383913/3	Lab Control Sample	Total/NA	Water	EPA 624.1	
180-131747-1 MS	W-11208058-122321-SSH-22021	Total/NA	Water	EPA 624.1	
180-131747-1 MSD	W-11208058-122321-SSH-22021	Total/NA	Water	EPA 624.1	

GC Semi VOA

Prep Batch: 383693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131747-1	W-11208058-122321-SSH-22021	Total/NA	Water	608	
MB 180-383693/1-A	Method Blank	Total/NA	Water	608	
LCS 180-383693/4-A	Lab Control Sample	Total/NA	Water	608	
LCSD 180-383693/5-A	Lab Control Sample Dup	Total/NA	Water	608	

Analysis Batch: 384070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131747-1	W-11208058-122321-SSH-22021	Total/NA	Water	EPA 608.3	383693
MB 180-383693/1-A	Method Blank	Total/NA	Water	EPA 608.3	383693
LCS 180-383693/4-A	Lab Control Sample	Total/NA	Water	EPA 608.3	383693
LCSD 180-383693/5-A	Lab Control Sample Dup	Total/NA	Water	EPA 608.3	383693

Metals

Prep Batch: 383533

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131747-1	W-11208058-122321-SSH-22021	Total Recoverable	Water	200.7	
MB 180-383533/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 180-383533/2-A	Lab Control Sample	Total Recoverable	Water	200.7	

Analysis Batch: 383759

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131747-1	W-11208058-122321-SSH-22021	Total Recoverable	Water	EPA 200.7 Rev 4	383533
MB 180-383533/1-A	Method Blank	Total Recoverable	Water	EPA 200.7 Rev 4	383533
LCS 180-383533/2-A	Lab Control Sample	Total Recoverable	Water	EPA 200.7 Rev 4	383533

Prep Batch: 383766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131747-1	W-11208058-122321-SSH-22021	Total/NA	Water	245.1	
MB 180-383766/1-A	Method Blank	Total/NA	Water	245.1	
LCS 180-383766/2-A	Lab Control Sample	Total/NA	Water	245.1	

Analysis Batch: 384058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131747-1	W-11208058-122321-SSH-22021	Total/NA	Water	EPA 245.1 Rev.	383766
MB 180-383766/1-A	Method Blank	Total/NA	Water	EPA 245.1 Rev.	383766
LCS 180-383766/2-A	Lab Control Sample	Total/NA	Water	EPA 245.1 Rev.	383766

Eurofins Pittsburgh

QC Association Summary

Client: GHD Services Inc.
Project/Site: 11208058, RACER Bay City

Job ID: 180-131747-1

General Chemistry

Analysis Batch: 383662

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131747-1	W-11208058-122321-SSH-22021	Total/NA	Water	SM 2540D	
MB 180-383662/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 180-383662/1	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 383680

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131747-1	W-11208058-122321-SSH-22021	Total/NA	Water	SM 4500 H+ B	
LCS 180-383680/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

Prep Batch: 383847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131747-1	W-11208058-122321-SSH-22021	Total/NA	Water	410.4	
MB 180-383847/12-A	Method Blank	Total/NA	Water	410.4	
MB 180-383847/36-A	Method Blank	Total/NA	Water	410.4	
LCS 180-383847/35-A	Lab Control Sample	Total/NA	Water	410.4	
180-131747-1 MS	W-11208058-122321-SSH-22021	Total/NA	Water	410.4	
180-131747-1 MSD	W-11208058-122321-SSH-22021	Total/NA	Water	410.4	

Analysis Batch: 383868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131747-1	W-11208058-122321-SSH-22021	Total/NA	Water	EPA 410.4	383847
MB 180-383847/12-A	Method Blank	Total/NA	Water	EPA 410.4	383847
MB 180-383847/36-A	Method Blank	Total/NA	Water	EPA 410.4	383847
LCS 180-383847/35-A	Lab Control Sample	Total/NA	Water	EPA 410.4	383847
180-131747-1 MS	W-11208058-122321-SSH-22021	Total/NA	Water	EPA 410.4	383847
180-131747-1 MSD	W-11208058-122321-SSH-22021	Total/NA	Water	EPA 410.4	383847

Leach Batch: 383997

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 180-383997/1-A	Method Blank	Total/NA	Water	D3987-85	

Analysis Batch: 384048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131747-1	W-11208058-122321-SSH-22021	Total/NA	Water	SM 5210B	
USB 180-384048/1	Method Blank	Total/NA	Water	SM 5210B	
LCS 180-384048/2	Lab Control Sample	Total/NA	Water	SM 5210B	

Analysis Batch: 384161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131747-1	W-11208058-122321-SSH-22021	Total/NA	Water	EPA 350.1	
LB 180-383997/1-A	Method Blank	Total/NA	Water	EPA 350.1	383997
MB 180-384161/17	Method Blank	Total/NA	Water	EPA 350.1	
LCS 180-384161/18	Lab Control Sample	Total/NA	Water	EPA 350.1	

Prep Batch: 384584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131747-1	W-11208058-122321-SSH-22021	Total/NA	Water	1664B	
MB 180-384584/1-A	Method Blank	Total/NA	Water	1664B	
LCS 180-384584/2-A	Lab Control Sample	Total/NA	Water	1664B	

Eurofins Pittsburgh

QC Association Summary

Client: GHD Services Inc.
Project/Site: 11208058, RACER Bay City

Job ID: 180-131747-1

General Chemistry

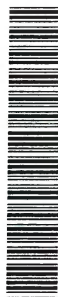
Analysis Batch: 384587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131747-1	W-11208058-122321-SSH-22021	Total/NA	Water	EPA 1664B	384584
MB 180-384584/1-A	Method Blank	Total/NA	Water	EPA 1664B	384584
LCS 180-384584/2-A	Lab Control Sample	Total/NA	Water	EPA 1664B	384584

Analysis Batch: 611278

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-131747-1	W-11208058-122321-SSH-22021	Total/NA	Water	SM 4500 P E	
MB 480-611278/3	Method Blank	Total/NA	Water	SM 4500 P E	
LCS 480-611278/4	Lab Control Sample	Total/NA	Water	SM 4500 P E	

Chain of Custody Record

[illegible]

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 180-131747-1

Login Number: 131747

List Number: 1

Creator: Abernathy, Eric L

List Source: Eurofins Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Client: GHD Services Inc.

Job Number: 180-131747-1

Login Number: 131747

List Number: 2

Creator: Stopa, Erik S

List Source: Eurofins Buffalo

List Creation: 01/07/22 09:58 AM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.3 ir gun #1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	True	

Attachment 2

Certification Statement

Certification Statement

"I, David Favero, certify under penalty of law that this document (January 20, 2022 GHD Semi-Annual Compliance Report (July 1 to December 31, 2021)), and all attachments were prepared under by direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."



RACER, Deputy Cleanup Manager – Michigan

1/20/2022

(Date)