



Memorandum

September 4, 2018

To: Peter Ramanauskas/EPA

Ref. No.: 017322A

From: *mc*
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**Subject: DRAFT Well Installation and First Quarterly Event Sampling Results
RACER Trust PCC-Validation
Pontiac, Michigan**

1. Introduction

GHD is providing this memorandum on behalf of Revitalizing Auto Communities Environmental Response (RACER) Trust for the former PCC-Validation property in Pontiac, Michigan (Site) (Figure 1). The purpose of this memorandum is to provide details of the first phase of monitoring well installation and results from the first quarterly sampling event. The installation and sampling activities were conducted as per the March 5, 2018 Interim Groundwater Monitoring Plan (IGWMP). The IGWMP amended the Sampling and Analysis (SAP) submitted to the U.S. EPA on July 25, 2014 and Supplemental SAP submitted to the U.S. EPA on January 13, 2015. The description of work completed below includes the first phase of monitoring well re-installation and the first quarterly sampling and analysis.

2. Monitoring Well Re-Installation and First Quarterly 2018 Groundwater Sampling

From May 29, 2018 through June 04, 2018, GHD mobilized to the Site to reinstall the first phase of monitoring wells as per the March 2018 IGWMP. Prior to monitoring well installation, monitoring wells were surveyed to ensure locations were accurate and adjust for ground surface elevation change from Site re-development. The purpose was to ensure the monitoring wells were located in the correct position and screened in the same interval as previous monitoring wells prior to Site re-development. See the Table below and Table 1 for a summary of monitoring well installation details.

A total of six monitoring wells (Figure 1) were installed and developed during this event (MW-02-07, MW-10-07, MW-33-07, MW-38-07, MW-64-08, and MW-85-12). Wells were installed via hollow-stem auger methods and screens were installed at various intervals (see below table and attached well logs in Attachment A). The wells were constructed with 2.0-inch diameter PVC casing with a 5-foot long, 0.010-inch slotted screen set to straddle the water table. Wells were developed with a submersible pump and dedicated



tubing. Well volume was calculated and 40 times the calculated well volume was removed at minimum during development activities. See table below for well construction information:

Well ID	Installation Date (mm/dd/yyyy)	Well Type	Top of Screen (feet bgs)	Bottom of Screen (feet bgs)	Screen Length (feet)	Depth to Water (feet bgs)
MW-02-07	06/04/2018	flush mount	11.40	16.40	5.0	12.11
MW-10-07	06/01/2018	flush mount	12.55	17.55	5.0	13.59
MW-33-07	05/31/2018	flush mount	17.24	22.24	5.0	17.20
MW-38-07	05/30/2018	flush mount	12.20	17.20	5.0	DRY
MW-64-08	05/29/2018	flush mount	10.25	15.25	5.0	6.32
MW-85-12	05/29/2018	flush mount	3.20	8.20	5.0	4.61

Stratigraphic and Instrumentation Logs and Well Details are presented in Attachment A.

2.1 Deviations from Interim Groundwater Monitoring Plan

During monitoring well re-installation, two monitoring wells (MW-21-07 and MW-79-12) were not completed as planned due to the presence of utilities and refusal before reaching the desired screen depth, respectively. It is anticipated the monitoring wells will be re-located and installed during the next phase of monitoring well re-installation.

Monitoring wells MW10-07 and MW02-07 were screened at depths deeper than the previous corresponding monitoring wells. This was due to the lack of a saturated interval at the previous screened interval. Therefore, the first saturated interval that was encountered was screened. MW02-07 and MW10-07 were screened at depths of approximately 2 and 7 feet deeper than previous corresponding monitoring wells, respectively.

During installation of monitoring well MW38-07, a minor saturated zone was encountered at the previous screened interval (17 to 22 feet below ground surface). However, after installation of monitoring well MW38-07, there was not adequate groundwater recovery to collect a sample, which is consist with the previous MW38-07. See Table 1 for a summary of monitoring well installation with comparison to previous installation details.

2.2 First Quarterly 2018 Groundwater Sampling

From June 5 to June 6, 2018, GHD mobilized to the Site to complete groundwater sampling. Ten monitoring wells were sampled, which included the newly installed monitoring wells (MW12-07, MW10-07, MW33-07, MW38-07, MW54-08, and MW85-12) and existing off-Site monitoring wells (MW80-12, MW92S-13, MW92I-13, MW93I-13, and MW81-12). MW-38-07 was dry; therefore, a sample could not be collected (as discussed in Section 2.1).

Prior to groundwater sample collection, static groundwater elevations were measured and recorded. Groundwater samples were collected from the monitoring wells using low-flow sampling techniques with a peristaltic pump and dedicated tubing. Field parameters collected during purging included pH, temperature,



conductivity, oxidation/reduction potential (ORP), dissolved oxygen (DO), and turbidity. Groundwater samples were collected after the field parameters stabilized.

The groundwater samples were analyzed using USEPA -Method 8260 for VOCs and/or Method 6020 for Aluminum, Lead, and Vanadium. The groundwater samples were shipped under chain-of-custody protocol via courier to Test America Laboratories in North Canon, OH and analyzed under a standard (2 week) turn-around-time (TAT). Table 2 presents the sample analysis summary. See Attachment B for the low-flow sampling field notes.

3. First Quarterly 2018 Groundwater Analytical Results

Groundwater analytical results were compared against all MDEQ Part 201 Cleanup Criteria. The following is a summary of the first quarterly 2018 groundwater sampling event:

- No VOCs were detected above MDEQ Part 201 Cleanup Criteria
- MW-10-07 exceeded the MDEQ Part 201 Non-Residential Drinking Water Criteria (DWC) for Aluminum.
- All other analyzed constituents were not detected or detected at concentrations below criteria.

A summary of groundwater sample results is presented in Figure 2. A summary of groundwater results are presented in Table 3. Laboratory Analytical Reports are presented in Attachment C.

4. Discussion

Groundwater levels were collected during the first quarterly sampling event; however, no groundwater contour map is provided in this summary memorandum. A groundwater contour map with the limited well distribution would present an inaccurate representation of groundwater on-Site. Based on the known hydrogeology of the Site, the saturated units are generally limited in connectivity. Once all required monitoring wells are installed, a groundwater contour map will be created to identify groundwater gradient. It should be noted that groundwater levels were consistent with historic levels except at MW10-07 as identified in Table 1.

During monitoring well re-installation, two monitoring wells were not completed (MW-21-07 and MW-79-12) as planned due to the presence of utilities and refusal before reaching the desired screen depth, respectively. It is recommended that the monitoring wells will be re-located and installed during the next phase of monitoring well re-installation.

Monitoring well MW38-08 did not produce sufficient groundwater to collect a sample, which is consistent with previous sampling events. It is recommended that the monitoring well be abandoned during the next phase of monitoring well re-installation.

During the first quarterly sampling event, no VOCs were detected above MDEQ Part 201 Cleanup Criteria including MW92I-13, which is located off-Site to the north of the Site. In 2013, MW92I-13 exceeded MDEQ Part 201 Cleanup Criteria for vinyl chloride. Since 2014, vinyl chloride concentrations at MW92-13 (and all



other off-Site monitoring well) have been below the MDEQ Part 201 Cleanup Criteria, including the most recent sampling event in 2018. Therefore, it is recommended monitoring wells located off-Site to the north (MW80-12, MW92S-13, MW92I-13, MW93I-13, and MW81-12) not be sampled in the third quarter 2018 sampling event but be sampled in fourth quarter 2018 sampling event. If sampling results from the fourth quarter 2018 event are also below criteria, we believe it is reasonable to discontinue monitoring these wells and abandoned them.

Monitoring well MW10-07 exceeded the MDEQ Part 201 Non-Residential DWC for Aluminum, which is consistent with previous groundwater data. It is possible elevated turbidity contributed to the aluminum; therefore, prior to next round of sampling the well will be re-developed and analyzed for both total and dissolved aluminum.

5. Monitoring Schedule

The following schedule is dependent upon access to the property and subcontractor availability.

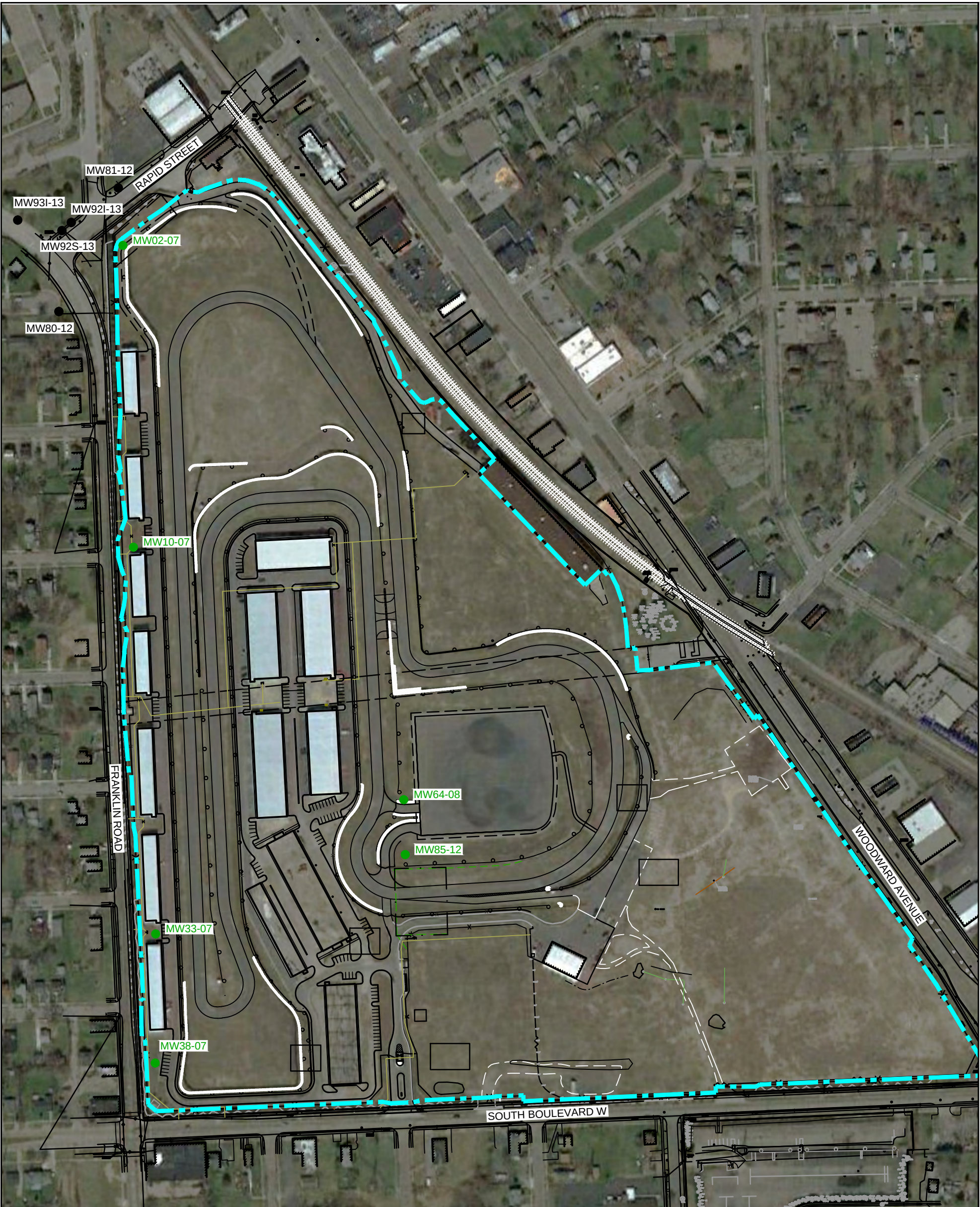
Task:

Monitoring Well Installation, Development and Quarterly Sampling
Well Installation and Data Report Submittal
Quarterly Groundwater Monitoring
Data Report Submittal
Quarterly Groundwater Monitoring
Data Report Submittal
Quarterly Groundwater Monitoring
First Annual Monitoring Report Submittal
Second Phase of Monitoring Well Installation

Approximate Timeline:

May 2018 - Completed
August 2018 - Completed
September 2018
December 2018
December 2018
February 2019
March 2019
June 2019
First or Second Q 2019

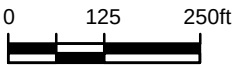
Encl: Figure1: Site Map with 2018 Monitoring Well Locations
Figure 2: Site Map with 2018 VOC and Metals Results
Table 1: Monitoring Well Installation Details
Table 2: Sample Analysis Summary
Table 3: First Quarter 2018 Groundwater Analytical Results
Attachment A: Stratigraphic and Instrumentation Logs and Well Details
Attachment B: Low-Flow Sampling Field Notes
Attachment C: Analytical Report



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MW80-12 MONITORING WELL LOCATION
- MW85-12 MONITORING WELL LOCATION (INSTALLED MAY, 2018)

Source: GOOGLE EARTH (DIGITAL GLOBE 4/7/2017)



RACER
1 CONCOURSE DRIVE
PONTIAC, MICHIGAN
SITE MAP WITH
2018 MONITORING WELL LOCATIONS

017322-T02
Aug 28, 2018

FIGURE 1

Table 1

**Monitoring Well Installation Details
RACER PCC- Validation
Pontiac, Michigan**

Sample Location	Current Ground Elevation (FT AMSL)	Previous Ground Elevation (FT AMSL)	Change in Ground Elevation: Previous Vs. Current (FT)	Current Screen Elevation (FT AMSL)			Previous Screen Elevation (FT AMSL)			Change in Screen Elevation: Previous Vs. Current (FT)	Current Groundwater Elevation (FT AMSL)	Previous Groundwater Elevation (FT AMSL)	Change in Groundwater Elevation: Previous Vs. Current (FT)
MW02-07	935.988	936.88	0.89	924.59	-	919.59	926.88	-	921.88	2.29	923.88	924.49	0.61
MW10-07	942.912	941.43	-1.48	930.36	-	925.36	937.43	-	932.43	7.07	929.32	940.63	11.31
MW21-07	950.719	952.28	1.56	NA		NA	937.78		932.78	NA	NA	934.33	NA
MW33-07	949.346	947.01	-2.34	931.75	-	926.75	932.01	-	927.01	0.26	932.15	931.31	-0.84
MW38-07	949.244	949.38	0.13	937.04	-	932.04	937.38		932.38	0.34	Dry	Dry	NA
MW64-08	947.085	947.71	0.63	936.84	-	931.84	936.71	-	937.71	-0.13	940.77	939.79	-0.97
MW-79-12	936.268	936.77	0.50	NA		NA	925.77		920.77	NA	NA	926.78	NA
MW85-12	947.156	947.69	0.53	943.96	-	938.96	944.69	-	939.69	0.73	942.55	944.67	2.12

Footnotes:

FT AMSL - Feet above mean sea level

FT BGS - Feet below ground surface

NA - No data available

Table 2

**Sample Analysis Summary
RACER PCC- Validation
Pontiac, Michigan**

Matrix	Sample ID	Sample Location	Date	QA/QC	Analysis
Groundwater	GW-17322A-060518-DS-001	MW33-07	6/5/2018	NA	AL, PB, V
Groundwater	GW-17322A-060518-DS-002	MW10-07	6/5/2018	NA	AL, PB, V
Groundwater	GW-17322A-060518-DS-003	MW02-07	6/5/2018	NA	TCL VOCs
Groundwater	GW-17322A-060518-DS-004	MW02-07	6/5/2018	Dupe	TCL VOCs
Groundwater	GW-17322A-060518-DS-005	MW64-08	6/5/2018	MS/MSD	TCL VOCs
Groundwater	GW-17322A-060518-DS-006	MW85-12	6/5/2018	NA	TCL VOCs
Groundwater	GW-17322A-060618-DS-007	MW81-12	6/6/2018	NA	TCL VOCs
Groundwater	GW-17322A-060618-DS-008	MW92i-13	6/6/2018	NA	TCL VOCs
Groundwater	GW-17322A-060618-DS-009	MW92s-13	6/6/2018	NA	TCL VOCs
Groundwater	GW-17322A-060618-DS-010	MW93i-13	6/6/2018	NA	TCL VOCs
Groundwater	GW-17322A-060618-DS-011	MW80-12	6/6/2018	NA	TCL VOCs

Footnotes:

ft bgs - Feet below ground surface

MW - Monitoring well

NA - Not applicable

TCL VOCs - Target Compound List Volatile Organic Compounds

AL, PB, V - Aluminum, lead, and vanadium

Table 3

First Quarter 2018 Groundwater Analytical Results
RACER PCC- Validation
Pontiac, Michigan

Sample Location: Sample Date: Sample Type:	MDEQ Generic Groundwater Cleanup Criteria: Residential and Nonresidential (1)						MW-02-07	MW-02-07	MW10-07	MW33-07	MW64-08	MW80-12	MW81-12	MW85-12	MW92i-13	MW92s-13	MW93i-13
	Units	Residential	Non-Residential	Groundwater	Residential Groundwater	Non-Residential Groundwater	6/5/2018	6/5/2018	6/5/2018	6/5/2018	6/5/2018	6/6/2018	6/6/2018	6/5/2018	6/6/2018	6/6/2018	6/6/2018
		Drinking Water	Drinking Water	Surface Water	Volatilization to	Volatilization to	Duplicate										
Metals		a	b	c	d	e											
Aluminum	mg/L	0.05	0.05	NA	NLV	NLV	--	--	1.8 ^{ab}	0.05 U	--	--	--	--	--	--	--
Lead	mg/L	0.004	0.004	0.004	NLV	NLV	--	--	0.00087 J	0.001 U	--	--	--	--	--	--	--
Vanadium	mg/L	0.0045	0.062	0.027	NLV	NLV	--	--	0.0033 J	0.005 U	--	--	--	--	--	--	--
Volatile Organic Compounds (VOCs)																	
1,1,1-Trichloroethane	mg/L	0.2	0.2	0.089	660	1300	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	0.0085	0.035	0.078	12	77	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	mg/L	0.005	0.005	0.33	17	110	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	mg/L	0.88	2.5	0.74	1000	2300	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	mg/L	0.007	0.007	0.13	0.2	1.3	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,4-Trichlorobenzene	mg/L	0.07	0.07	0.099	300	300	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	0.0002	0.0002	NA	0.22	1.2	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	0.00005	0.00005	0.0057	2.4	15	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichlorobenzene	mg/L	0.6	0.6	0.013	160	160	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	mg/L	0.005	0.005	0.36	9.6	59	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	mg/L	0.005	0.005	0.23	16	36	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	mg/L	0.0066	0.019	0.028	18	41	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	mg/L	0.075	0.075	0.017	16	74	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	13	38	2.2	240000	240000	0.0032 J	0.0027 J	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2-Hexanone	mg/L	1	2.9	ID	4200	8700	0.01 U	0.01 U	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (M)	mg/L	1.8	5.2	ID	20000	20000	0.00061 J	0.00069 J	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Acetone	mg/L	0.73	2.1	1.7	1000000	1000000	0.011	0.013	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Benzene	mg/L	0.005	0.005	0.2	5.6	35	0.0002 J	0.00022 J	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromodichloromethane	mg/L	0.08	0.08	ID	4.8	37	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromoform	mg/L	0.08	0.08	ID	470	3100	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromomethane (Methyl bromide)	mg/L	0.01	0.029	0.005	4	9	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Carbon disulfide	mg/L	0.8	2.3	ID	250	550	0.005 U	0.005 U	--	--	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Carbon tetrachloride	mg/L	0.005	0.005	0.038	0.37	2.4	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	mg/L	0.1	0.1	0.025	210	470	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroethane	mg/L	0.43	1.7	1.1	5700	5700	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform (Trichloromethane)	mg/L	0.08	0.08	0.35	28	180	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloromethane (Methyl chloride)	mg/L	0.26	1.1	ID	8.6	45	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	mg/L	0.07	0.07	0.62	93	210	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,3-Dichloropropene	mg/L	NA	NA	NA	NA	NA	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cyclohexane	mg/L	NA	NA	NA	NA	NA	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	mg/L	0.08	0.08	ID	14	110	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorodifluoromethane (CFC-12)	mg/L	1.7	4.8	ID	220	300	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	mg/L	0.074	0.074	0.018	110	170	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Isopropyl benzene	mg/L	0.8	2.3	0.028	56	56	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methyl acetate	mg/L	NA	NA	NA	NA	NA	0.01 U	0.01 U	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Methyl cyclohexane	mg/L	NA	NA	NA	NA	NA	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methyl tert butyl ether (MTBE)	mg/L	0.04	0.04	7.1	47000	47000	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methylene chloride	mg/L	0.005	0.005	1.5	220	1400	0.005 U	0.005 U	--	--	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Styrene	mg/L	0.1	0.1	0.08	170	310	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Tetrachloroethene	mg/L	0.005	0.005	0.06	25	170	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	mg/L	0.79	0.79	0.27	530	530	0.00027 J	0.00028 J	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	mg/L	0.1	0.1	1.5	85	200	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,3-Dichloropropene	mg/L	NA	NA	NA	NA	NA	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	mg/L	0.005	0.005	0.2	2.2	4.9	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L	2.6	7.3	NA	1100	1100	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trifluorotrichloroethane (CFC-113)	mg/L	170	170	0.032	170	170	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	mg/L	0.002	0.002	0.013	1.1	13	0.001 U	0.001 U	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.00083 J	0.001 U	0.001 U
Xylenes (total)	mg/L	0.28	0.28	0.049	190	190	0.002 U	0.002 U	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Footnotes:
U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J The associated value is qualified as an estimated quantity.
UJ The analyte was reported or qualified as not detected however, the sample report limit is qualified as an estimated value and may be inaccurate or imprecise.
(1) MDEQ (Michigan) Generic groundwater cleanup criteria, administrative rule R 299.44 effective December 30, 2013, pursuant to Part 201 of 1994 PA 451 as amended
NA Criteria not available or not applicable
7.4^{ab} - Boxed cell denotes exceedance of cleanup criteria screening level identified by superscript.
-- Sample not analyzed
ID Insufficient data to develop criterion
NLV Not likely to volitilize under most conditions

Attachment A

Stratigraphic and Instrumentation Logs and Well Details

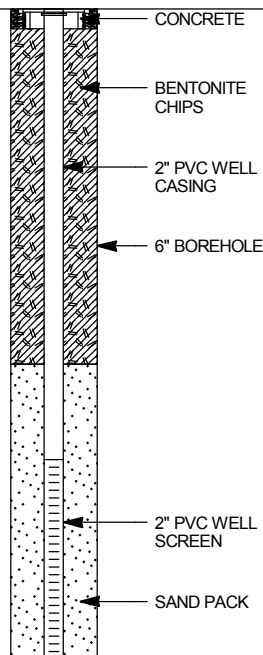


STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: PCC VALIDATION
PROJECT NUMBER: 017322
CLIENT: RACER
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: MW02-07
DATE COMPLETED: JUNE 4, 2018
DRILLING METHOD: HOLLOW STEM
AUGER FIELD PERSONNEL: S. KIPPEN

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)		
2	SP/GP-SAND/GRAVEL, trace silt, trace debris, dense, fine sand and gravel, poorly graded, brown/gray, moist		 CONCRETE BENTONITE CHIPS 2" PVC WELL CASING 6" BOREHOLE 2" PVC WELL SCREEN SAND PACK	1HSA				
4								
6								
8	SP-SAND, trace silt, trace fine gravel, compact, fine grained, poorly graded, brown, moist	7.20		2HSA				
10								
12				3HSA				
14	- wet at 14.2ft BGS							
16	END OF BOREHOLE @ 16.2ft BGS	16.20		4HSA				
18								
20								
22			<u>WELL DETAILS</u> Screened interval: 11.40 to 16.40ft BGS Length: 5ft Diameter: 2in Slot Size: 0.010 Material: PVC Seal: 0.50 to 9.00ft BGS Material: BENTONITE CHIPS Sand Pack: 9.00 to 16.65ft BGS Material: SAND					
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ∇

OVERBURDEN LOG 017322-RACER-WI.GPJ GHD_Corp 19/6/18



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: PCC VALIDATION
PROJECT NUMBER: 017322
CLIENT: RACER
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: MW10-07
DATE COMPLETED: JUNE 1, 2018
DRILLING METHOD: HOLLOW STEM
GEOPROBE FIELD PERSONNEL: S. KIPPEN

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)		
2	TOPSOIL, sod - with fine gravel at 0.8ft BGS	0.60	CONCRETE	1DP				
4	SP-SAND, trace silt, compact, fine grained, poorly graded, dark brown/black, moist	2.80	BENTONITE CHIPS					
6	CL-SANDY CLAY, trace silt, few fine gravel, stiff, low plasticity, dark brown, moist		2" PVC WELL CASING	2DP				
8			6" BOREHOLE					
10				3DP				
12								
14			2" PVC WELL SCREEN	4DP				
16	ML-SILT, trace fine sand, compact, fine grained, gray/light gray, wet	16.00	SAND PACK					
18	END OF BOREHOLE @ 16.5ft BGS	16.50						
20								
22								
24								
26								
28								
30								
32								
34								

WELL DETAILS

Screened interval:
12.55 to 17.55ft BGS
Length: 5ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Seal:
0.50 to 10.50ft BGS
Material: BENTONITE CHIPS
Sand Pack:
10.50 to 17.75ft BGS
Material: SAND

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ∇

OVERBURDEN LOG 017322-RACER-WI.GPJ GHD_Corp 19/6/18

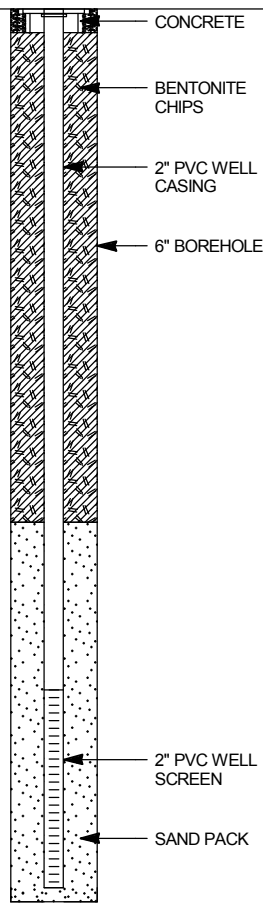


STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: PCC VALIDATION
PROJECT NUMBER: 017322
CLIENT: RACER
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: MW33-07
DATE COMPLETED: MAY 31, 2018
DRILLING METHOD: HOLLOW STEM
AUGER FIELD PERSONNEL: S. KIPPEN

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)		
2	SP/CL-SAND/CLAY, with fine to coarse subangular gravel, compact, fine sand, firm, low plasticity, brown/gray, moist - wet at 6.0ft BGS		 CONCRETE BENTONITE CHIPS 2" PVC WELL CASING 6" BOREHOLE 2" PVC WELL SCREEN SAND PACK	1HSA				
4				2HSA				
6				3HSA				
8				4HSA				
10				5HSA				
12	END OF BOREHOLE @ 22.0ft BGS	22.00						
14								
16								
18								
20								
22								
24				<u>WELL DETAILS</u> Screened interval: 17.24 to 22.24ft BGS Length: 5ft Diameter: 2in Slot Size: 0.010 Material: PVC Seal: 0.60 to 13.00ft BGS Material: BENTONITE CHIPS Sand Pack: 13.00 to 22.60ft BGS Material: SAND				
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ∇

OVERBURDEN LOG 017322-RACER-WI.GPJ GHD_Corp 19/6/18

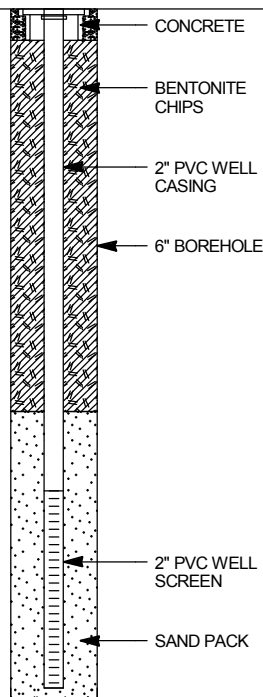


STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: PCC VALIDATION
PROJECT NUMBER: 017322
CLIENT: RACER
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: MW38-07
DATE COMPLETED: MAY 30, 2018
DRILLING METHOD: HOLLOW STEM
AUGER FIELD PERSONNEL: S. KIPPEN

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)		PID (ppm)
2	SC-CLAYEY SAND, few fine gravel, trace silt, compact, fine grained, poorly graded, light brown to brown, moist		 CONCRETE BENTONITE CHIPS 2" PVC WELL CASING 6" BOREHOLE 2" PVC WELL SCREEN SAND PACK	1HSA				0.4
4								
6								
8				2HSA				
10								
12				3HSA				
14								
16				4HSA				
17.00								
18	END OF BOREHOLE @ 17.0ft BGS	17.00	<u>WELL DETAILS</u> Screened interval: 12.20 to 17.20ft BGS Length: 5ft Diameter: 2in Slot Size: 0.010 Material: PVC Seal: 0.80 to 10.20ft BGS Material: BENTONITE CHIPS Sand Pack: 10.20 to 17.50ft BGS Material: SAND					
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 017322-RACER-WI.GPJ GHD_Corp 19/6/18

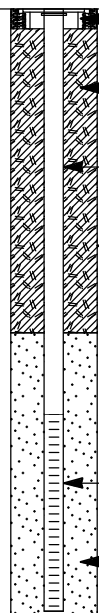


STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: PCC VALIDATION
PROJECT NUMBER: 017322
CLIENT: RACER
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: MW64-08
DATE COMPLETED: MAY 29, 2018
DRILLING METHOD: HOLLOW STEM
AUGER FIELD PERSONNEL: S. KIPPEN

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)		
2	SP-SAND, with fine to coarse gravel, trace silt, trace clay, compact, fine grained, poorly graded, light brown to brown, moist			1HSA				
4								
6				2HSA				
8								
10				3HSA				
12								
14								
16								
18								
20								
22	END OF BOREHOLE @ 15.0ft BGS	15.00	<u>WELL DETAILS</u> Screened interval: 10.25 to 15.25ft BGS Length: 5ft Diameter: 2in Slot Size: 0.010 Material: PVC Seal: 0.50 to 8.20ft BGS Material: BENTONITE CHIPS Sand Pack: 8.20 to 15.50ft BGS Material: SAND					
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ∇

OVERBURDEN LOG 017322-RACER-WI.GPJ GHD_Corp 19/6/18



STRATIGRAPHIC LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: PCC VALIDATION
PROJECT NUMBER: 017322
CLIENT: RACER
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: MW79-12
DATE COMPLETED: June 1, 2018
DRILLING METHOD: HOLLOW STEM
FIELD PERSONNEL: S. KIPPEN

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft	SAMPLE				
			NUMBER	INTERVAL	REC (%)	'N' VALUE	
2	SP/GP-SAND/GRAVEL (FILL), trace silt, trace debris, dense, fine sand and gravel, poorly graded, brown, moist		1DP				
4			2DP				
6	END OF BOREHOLE @ 7.0ft BGS NOTE - REFUSAL @ 7.0 ft BGS	7.00					
8							
10							
12							
14							
16							
18							
20							
22							
24							
26							
28							
30							
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 017322-RACER-WI.GPJ GHD_Corp 4/9/18

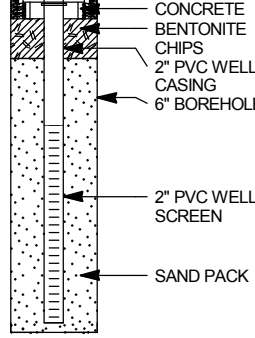


STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: PCC VALIDATION
PROJECT NUMBER: 017322
CLIENT: RACER
LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: MW85-12
DATE COMPLETED: MAY 29, 2018
DRILLING METHOD: HOLLOW STEM
AUGER FIELD PERSONNEL: S. KIPPEN

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)		
2	SP-SAND, with fine to coarse gravel, trace silt, compact, fine grained, poorly graded, light brown to brown, moist			1HSA				
4								
6	- wet at 7.5ft BGS			2HSA				
8								
8.50	END OF BOREHOLE @ 8.5ft BGS	8.50						
10			<u>WELL DETAILS</u> Screened interval: 3.20 to 8.20ft BGS Length: 5ft Diameter: 2in Slot Size: 0.010 Material: PVC Seal: 0.50 to 1.50ft BGS Material: BENTONITE CHIPS Sand Pack: 1.50 to 8.45ft BGS Material: SAND					
12								
14								
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ∇

OVERBURDEN LOG 017322-RACER-WI.GPJ GHD_Corp 19/6/18

Attachment B

Low Flow Sampling Field Notes

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: PCC-Validation
Ref. No.: 017322A

Date: 6-5-18
Personnel: K. Trestrail
D. Saliba

Monitoring Well Data:

Well No.: MW 02-03
Vapour PID (ppm): —
Measurement Point: TOC
Constructed Well Depth (m/ft): 16.40
Measured Well Depth (m/ft): 15.86
Depth of Sediment (m/ft): 0.54

Saturated Screen Length (m/ft): 3.75 = 0.6 gal
Depth to Pump Intake (m/ft)⁽¹⁾: 14.86
Well Diameter, D (cm/in): 2.0
Well Screen Volume, V_s (L)⁽²⁾: —
Initial Depth to Water (m/ft): 12.11

Start: 1130
End: —

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
1200	150	14.09	1.98	11.98	1.45	26.1	8.33	7.72	94.0		
1205	150	14.42	2.31	12.22	1.48	20.1	8.15	7.67	95.0		
1210	150										

Sample ID: GM-17322A-060518-DS-003

Sample Time: 1210

Notes: GM-17322A-060518-DS-004 ← Dup

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: PCC-Validation
Ref. No.: 017322A

Date: 6-5-18
Personnel: K. Trestrail
D. Saliba

Monitoring Well Data:

Well No.: MW 10-07
Vapour PID (ppm): -
Measurement Point: TOC
Constructed Well Depth (m/ft): 17.55
Measured Well Depth (m/ft): 17.21
Depth of Sediment (m/ft): 0.34

Saturated Screen Length (m/ft): 3.62 = 10.58 gal
Depth to Pump Intake (m/ft)⁽¹⁾: 16.21
Well Diameter, D (cm)⁽²⁾: 2.0
Well Screen Volume, V_s (L)⁽²⁾: -
Initial Depth to Water (m/ft): 13.59

Start: 1015
End: 1105

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
1045	150	15.20	-2.61	12.18	1.58	20.5	7.06	8.16	64.0		
1050	150	15.35	-1.76	12.24	1.54	25.7	7.23	8.15	63.0		
1055	150	15.60	-2.01	12.15	1.53	24.0	7.32	8.12	63.0		
1100	150	15.74	-2.15	12.23	1.51	32.7	7.33	8.14	63.0		

Sample ID: GW-17322A-060518-DS-002

Sample Time: 1100

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where $r = (D/2)$ and L are in cm. For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: PCC-Validation
Ref. No.: 017322A

Date: 6-5-18
Personnel: K. Trearail
D. Saliba

Monitoring Well Data:

Well No.: MW33-07
Vapour PID (ppm): —
Measurement Point: TOC
Constructed Well Depth (m/ft): 22.6
Measured Well Depth (m/ft): 21.86
Depth of Sediment (m/ft): —

Saturated Screen Length (m): 4.66 = 0.75 gal
Depth to Pump Intake (m/ft): —
Well Diameter, D (cm/in): 2"
Well Screen Volume, V_s (L): —
Initial Depth to Water (m/ft): 17.20

Start time: 0850
End: 0951

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
~~0850~~	~~150~~	~~17.34~~	~~0.1~~	~~12.78~~	~~3.76~~	~~6.27~~	~~1.46~~	~~7.31~~	~~27.0~~		
0925	150	17.37	0.13	12.59	3.70	5.63	1.32	7.30	25.0		
0930	150	17.37	0.13	12.59	3.63	5.19	1.16	7.31	23.0		
0935	150	17.38	0.14	12.56	3.61	2.46	1.10	7.29	21.0		
0940	150	17.38	0.14	12.58	3.61	1.89	1.05	7.27	19.0		
0945	150	17.38	0.14	12.79	3.57	3.62	0.99	7.26	17.0		
0950	150	17.38	0.14	12.86	3.56	2.62	0.92	7.25	16.0		

Sample ID: GW-17322A-060518-DS-001

Sample Time: 0950

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.



A diagram of a vertical tube. A horizontal line is at the top. Inside the tube, there is a shaded region at the bottom, indicated by several horizontal lines. The rest of the tube is empty.

Saturated Screen Length (m/ft): _____
 Depth to Pump Intake (m/ft)⁽¹⁾: _____
 Well Diameter, D (cm/in): _____
 Well Screen Volume, V_s (L)⁽²⁾: _____
 Initial Depth to Water (m/ft): DRY

DRY

GHD Form SP-09 – Revision 02 – August 8, 2017

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: PCC-Validation
Ref. No.: 017322A

Date: 6-5-18
Personnel: K. Trestrail
D. Saliba

Monitoring Well Data:

Well No.: MN 64-08
Vapour PID (ppm): —
Measurement Point: TOC
Constructed Well Depth (m/ft): 15.25
Measured Well Depth (m/ft): 15.09
Depth of Sediment (m/ft): 0.16

Saturated Screen Length (m/ft): 8.77 = 1.40 gal
Depth to Pump Intake (m/ft)⁽¹⁾: 14.25
Well Diameter, D (cm/in): 2.0"
Well Screen Volume, V_s (L)⁽²⁾:
Initial Depth to Water (m/ft): 6.32

Start: 1330
End: 1420

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
1400	150	10.22	3.90	11.82	1.13	9.71	7.09	7.60	115.0		
1405	150	10.46	4.14	12.50	1.13	7.09	6.97	7.53	114.0		
1410	150	10.61	4.29	12.65	1.13	4.01	6.79	7.50	114.0		

Sample ID: GW-17322A-060518-DS-005 (MS/MSD)

Sample Time: 1410

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Monitoring Well Record for Low Flow Purging
(Form SP-09)

Project Data:

Project Name: PCC Validation
Ref. No.: 013322A

Date: 6-6-18
Personnel: K. Trestail
D. Saliba

Monitoring Well Data:

Well No.: MW80-12
Vapour PID (ppm): -
Measurement Point: TGC
Constructed Well Depth (m/ft): -
Measured Well Depth (m/ft): 11.50
Depth of Sediment (m/ft): -

Saturated Screen Length (m/ft): 6.09
Depth to Pump Intake (m/ft)⁽¹⁾: 9.50
Well Diameter, D (cm/in): 2.0"
Well Screen Volume, V_s (L)⁽²⁾: 0.97 gals
Initial Depth to Water (m/ft): 5.41

Start: 1205
End: -

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required:				±3 %	±0.005 or 0.01 ⁽⁵⁾	±10 %	±10 %	±0.1 Units	±10 mV		
1235	150	6.04	0.63	12.87	0.90	6.88	0.23	7.38	20.0		
1240	150	6.00	0.59	13.27	0.92	4.40	0.23	7.36	19.0		
1245	150	5.90	0.54	13.30	0.95	4.65	0.23	7.39	17.0		

Notes: Sample GW-17322A-06048-DS-011 @ 1245

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.



Project Data:

Project Name: PCC-Validation
Ref. No.: 017322A

Date: 6-6-18
Personnel: K. Trestrail
D. Saliba

Monitoring Well Data:

Well No.: MW81-12
Vapour PID (ppm): -
Measurement Point: TOC
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 18.38
Depth of Sediment (m/ft):

Saturated Screen Length (m/ft): 11.07 = 11.77 gal
Depth to Pump Intake (m/ft)⁽¹⁾: 16.38
Well Diameter, D (cm/in): 2.0"
Well Screen Volume, V_s (L)⁽²⁾:
Initial Depth to Water (m/ft): 7.31

Start: 0830
End: 0915

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
0900	150	7.81	0.50	11.89	3.22	23.4	0.30	7.74	-115.0		
0905	150	8.02	0.71	11.89	3.22	18.2	0.25	7.78	-122.0		
0910	150	8.05		11.90	3.23	18.6	0.25	7.80	-125.0		

Sample ID: GW-17322A-060618-DS-007

Sample Time: 0910

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2)L$ in mL, where r ($r=D/2$) and L are in cm. For Imperial units, $V_s = \pi(r^2)L * (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .
- For conductivity, the average value of three readings <1 mS/cm ± 0.005 mS/cm or where conductivity >1 mS/cm ± 0.01 mS/cm.

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: PCC-Validation
Ref. No.: 017322A

Date: 6-6-18
Personnel: K. Trestail
D. Saliba

Monitoring Well Data:

Well No.: MN921-13
Vapour PID (ppm): —
Measurement Point: TOC
Constructed Well Depth (m/ft): —
Measured Well Depth (m/ft): 16.0
Depth of Sediment (m/ft): 16.0

Saturated Screen Length (m/ft): 9.89 = 1.58 gal
Depth to Pump Intake (m/ft)⁽¹⁾: 14.0
Well Diameter, D (cm/in): 2.0"
Well Screen Volume, V_s (L)⁽²⁾: —
Initial Depth to Water (m/ft): 6.11

Start: 0920

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
0950	150	6.50	0.39	11.34	2.19	13.3	0.17	7.20	-86.0		
0955	150	6.48	0.37	11.50	2.18	11.3	0.17	7.29	-85.0		
1000	150	6.48	0.37	11.64	2.21	11.1	0.15	7.30	-82.0		

Sample ID: GN-17322A-060618-DS-008

Sample Time: 1000

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where $r = (D/2)$ and L are in cm.
For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Attachment C Analytical Report

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton

4101 Shuffel Street NW

North Canton, OH 44720

Tel: (330)497-9396

TestAmerica Job ID: 240-96696-1

Client Project/Site: 17322A-T06, PCC Validation

For:

GHD Services Inc.

26850 Haggerty Rd.

Farmington Hills, Michigan 48331

Attn: James Abston



Authorized for release by:

6/15/2018 7:59:29 AM

Denise Heckler, Project Manager II

(330)966-9477

denise.heckler@testamericainc.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.

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Case Narrative

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Job ID: 240-96696-1

Laboratory: TestAmerica Canton

Narrative

Job Narrative
240-96696-1

Comments

No additional comments.

Receipt

The samples were received on 6/7/2018 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.8° C.

GC/MS VOA

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

Metals

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

VOA Prep

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

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Sample Summary

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-96696-1	TB-17322A-060518-DS	Water	06/05/18 00:00	06/07/18 09:30
240-96696-2	GW-17322A-060518-DS-001	Water	06/05/18 09:50	06/07/18 09:30
240-96696-3	GW-17322A-060518-DS-002	Water	06/05/18 11:00	06/07/18 09:30
240-96696-4	GW-17322A-060518-DS-003	Water	06/05/18 12:10	06/07/18 09:30
240-96696-5	GW-17322A-060518-DS-004	Water	06/05/18 12:15	06/07/18 09:30
240-96696-6	GW-17322A-060518-DS-005	Water	06/05/18 14:10	06/07/18 09:30
240-96696-7	GW-17322A-060518-DS-006	Water	06/05/18 14:45	06/07/18 09:30
240-96696-8	GW-17322A-060618-DS-007	Water	06/06/18 09:10	06/07/18 09:30
240-96696-9	GW-17322A-060618-DS-008	Water	06/06/18 10:00	06/07/18 09:30
240-96696-10	GW-17322A-060618-DS-009	Water	06/06/18 10:35	06/07/18 09:30
240-96696-11	GW-17322A-060618-DS-010	Water	06/06/18 11:50	06/07/18 09:30
240-96696-12	GW-17322A-060618-DS-011	Water	06/06/18 12:45	06/07/18 09:30

TestAmerica Canton

Detection Summary

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Client Sample ID: TB-17322A-060518-DS

Lab Sample ID: 240-96696-1

No Detections.

Client Sample ID: GW-17322A-060518-DS-001

Lab Sample ID: 240-96696-2

No Detections.

Client Sample ID: GW-17322A-060518-DS-002

Lab Sample ID: 240-96696-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	1800		50	34	ug/L	1		6020	Total Recoverable
Lead	0.87	J	1.0	0.45	ug/L	1		6020	Total Recoverable
Vanadium	3.3	J	5.0	0.82	ug/L	1		6020	Total Recoverable

Client Sample ID: GW-17322A-060518-DS-003

Lab Sample ID: 240-96696-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	11		10	5.4	ug/L	1		8260B	Total/NA
Benzene	0.20	J	1.0	0.13	ug/L	1		8260B	Total/NA
2-Butanone (MEK)	3.2	J	10	1.2	ug/L	1		8260B	Total/NA
4-Methyl-2-pentanone (MIBK)	0.61	J	10	0.42	ug/L	1		8260B	Total/NA
Toluene	0.27	J	1.0	0.14	ug/L	1		8260B	Total/NA

Client Sample ID: GW-17322A-060518-DS-004

Lab Sample ID: 240-96696-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	13		10	5.4	ug/L	1		8260B	Total/NA
Benzene	0.22	J	1.0	0.13	ug/L	1		8260B	Total/NA
2-Butanone (MEK)	2.7	J	10	1.2	ug/L	1		8260B	Total/NA
4-Methyl-2-pentanone (MIBK)	0.69	J	10	0.42	ug/L	1		8260B	Total/NA
Toluene	0.28	J	1.0	0.14	ug/L	1		8260B	Total/NA

Client Sample ID: GW-17322A-060518-DS-005

Lab Sample ID: 240-96696-6

No Detections.

Client Sample ID: GW-17322A-060518-DS-006

Lab Sample ID: 240-96696-7

No Detections.

Client Sample ID: GW-17322A-060618-DS-007

Lab Sample ID: 240-96696-8

No Detections.

Client Sample ID: GW-17322A-060618-DS-008

Lab Sample ID: 240-96696-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.83	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: GW-17322A-060618-DS-009

Lab Sample ID: 240-96696-10

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Detection Summary

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Client Sample ID: GW-17322A-060618-DS-010

Lab Sample ID: 240-96696-11

☐ No Detections.

Client Sample ID: GW-17322A-060618-DS-011

Lab Sample ID: 240-96696-12

☐ No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Method Summary

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
6020	Metals (ICP/MS)	SW846	TAL CAN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CAN
5030B	Purge and Trap	SW846	TAL CAN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: TB-17322A-060518-DS

Date Collected: 06/05/18 00:00

Date Received: 06/07/18 09:30

Lab Sample ID: 240-96696-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/12/18 23:01	1
Benzene	1.0	U	1.0	0.13	ug/L			06/12/18 23:01	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/12/18 23:01	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/12/18 23:01	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/12/18 23:01	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/12/18 23:01	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			06/12/18 23:01	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/12/18 23:01	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			06/12/18 23:01	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/12/18 23:01	1
Chloroform	1.0	U	1.0	0.13	ug/L			06/12/18 23:01	1
Chloromethane	1.0	U	1.0	0.20	ug/L			06/12/18 23:01	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			06/12/18 23:01	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/12/18 23:01	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/12/18 23:01	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			06/12/18 23:01	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/12/18 23:01	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/12/18 23:01	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			06/12/18 23:01	1
2-Hexanone	10	U	10	0.54	ug/L			06/12/18 23:01	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/12/18 23:01	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			06/12/18 23:01	1
Styrene	1.0	U	1.0	0.10	ug/L			06/12/18 23:01	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			06/12/18 23:01	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/12/18 23:01	1
Toluene	1.0	U	1.0	0.14	ug/L			06/12/18 23:01	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/12/18 23:01	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/12/18 23:01	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			06/12/18 23:01	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			06/12/18 23:01	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			06/12/18 23:01	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			06/12/18 23:01	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/12/18 23:01	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			06/12/18 23:01	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/12/18 23:01	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/12/18 23:01	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/12/18 23:01	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			06/12/18 23:01	1
Methyl acetate	10	U	10	1.7	ug/L			06/12/18 23:01	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			06/12/18 23:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/12/18 23:01	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			06/12/18 23:01	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			06/12/18 23:01	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			06/12/18 23:01	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			06/12/18 23:01	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/12/18 23:01	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/12/18 23:01	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/12/18 23:01	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,2-Dichloroethane-d4 (Surr)	98		61 - 138		06/12/18 23:01	1
4-Bromofluorobenzene (Surr)	98		69 - 120		06/12/18 23:01	1
Toluene-d8 (Surr)	103		73 - 120		06/12/18 23:01	1
Dibromofluoromethane (Surr)	105		69 - 124		06/12/18 23:01	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-17322A-060518-DS-003

Date Collected: 06/05/18 12:10

Date Received: 06/07/18 09:30

Lab Sample ID: 240-96696-4

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	11		10	5.4	ug/L			06/12/18 22:06	1
Benzene	0.20	J	1.0	0.13	ug/L			06/12/18 22:06	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/12/18 22:06	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/12/18 22:06	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/12/18 22:06	1
2-Butanone (MEK)	3.2	J	10	1.2	ug/L			06/12/18 22:06	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			06/12/18 22:06	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/12/18 22:06	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			06/12/18 22:06	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/12/18 22:06	1
Chloroform	1.0	U	1.0	0.13	ug/L			06/12/18 22:06	1
Chloromethane	1.0	U	1.0	0.20	ug/L			06/12/18 22:06	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			06/12/18 22:06	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/12/18 22:06	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/12/18 22:06	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			06/12/18 22:06	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/12/18 22:06	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/12/18 22:06	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			06/12/18 22:06	1
2-Hexanone	10	U	10	0.54	ug/L			06/12/18 22:06	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/12/18 22:06	1
4-Methyl-2-pentanone (MIBK)	0.61	J	10	0.42	ug/L			06/12/18 22:06	1
Styrene	1.0	U	1.0	0.10	ug/L			06/12/18 22:06	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			06/12/18 22:06	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/12/18 22:06	1
Toluene	0.27	J	1.0	0.14	ug/L			06/12/18 22:06	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/12/18 22:06	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/12/18 22:06	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			06/12/18 22:06	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			06/12/18 22:06	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			06/12/18 22:06	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			06/12/18 22:06	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/12/18 22:06	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			06/12/18 22:06	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/12/18 22:06	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/12/18 22:06	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/12/18 22:06	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			06/12/18 22:06	1
Methyl acetate	10	U	10	1.7	ug/L			06/12/18 22:06	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			06/12/18 22:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/12/18 22:06	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			06/12/18 22:06	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			06/12/18 22:06	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			06/12/18 22:06	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			06/12/18 22:06	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/12/18 22:06	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/12/18 22:06	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/12/18 22:06	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,2-Dichloroethane-d4 (Surr)	93		61 - 138		06/12/18 22:06	1
4-Bromofluorobenzene (Surr)	100		69 - 120		06/12/18 22:06	1
Toluene-d8 (Surr)	98		73 - 120		06/12/18 22:06	1
Dibromofluoromethane (Surr)	100		69 - 124		06/12/18 22:06	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-17322A-060518-DS-004

Date Collected: 06/05/18 12:15

Date Received: 06/07/18 09:30

Lab Sample ID: 240-96696-5

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	13		10	5.4	ug/L			06/12/18 22:32	1
Benzene	0.22	J	1.0	0.13	ug/L			06/12/18 22:32	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/12/18 22:32	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/12/18 22:32	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/12/18 22:32	1
2-Butanone (MEK)	2.7	J	10	1.2	ug/L			06/12/18 22:32	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			06/12/18 22:32	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/12/18 22:32	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			06/12/18 22:32	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/12/18 22:32	1
Chloroform	1.0	U	1.0	0.13	ug/L			06/12/18 22:32	1
Chloromethane	1.0	U	1.0	0.20	ug/L			06/12/18 22:32	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			06/12/18 22:32	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/12/18 22:32	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/12/18 22:32	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			06/12/18 22:32	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/12/18 22:32	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/12/18 22:32	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			06/12/18 22:32	1
2-Hexanone	10	U	10	0.54	ug/L			06/12/18 22:32	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/12/18 22:32	1
4-Methyl-2-pentanone (MIBK)	0.69	J	10	0.42	ug/L			06/12/18 22:32	1
Styrene	1.0	U	1.0	0.10	ug/L			06/12/18 22:32	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			06/12/18 22:32	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/12/18 22:32	1
Toluene	0.28	J	1.0	0.14	ug/L			06/12/18 22:32	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/12/18 22:32	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/12/18 22:32	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			06/12/18 22:32	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			06/12/18 22:32	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			06/12/18 22:32	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			06/12/18 22:32	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/12/18 22:32	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			06/12/18 22:32	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/12/18 22:32	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/12/18 22:32	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/12/18 22:32	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			06/12/18 22:32	1
Methyl acetate	10	U	10	1.7	ug/L			06/12/18 22:32	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			06/12/18 22:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/12/18 22:32	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			06/12/18 22:32	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			06/12/18 22:32	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			06/12/18 22:32	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			06/12/18 22:32	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/12/18 22:32	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/12/18 22:32	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/12/18 22:32	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,2-Dichloroethane-d4 (Surr)	91		61 - 138		06/12/18 22:32	1
4-Bromofluorobenzene (Surr)	100		69 - 120		06/12/18 22:32	1
Toluene-d8 (Surr)	98		73 - 120		06/12/18 22:32	1
Dibromofluoromethane (Surr)	100		69 - 124		06/12/18 22:32	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-17322A-060518-DS-005

Date Collected: 06/05/18 14:10

Date Received: 06/07/18 09:30

Lab Sample ID: 240-96696-6

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/12/18 23:30	1
Benzene	1.0	U	1.0	0.13	ug/L			06/12/18 23:30	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/12/18 23:30	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/12/18 23:30	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/12/18 23:30	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/12/18 23:30	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			06/12/18 23:30	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/12/18 23:30	1
Chlorobenzene	1.0	U F1 F2	1.0	0.14	ug/L			06/12/18 23:30	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/12/18 23:30	1
Chloroform	1.0	U	1.0	0.13	ug/L			06/12/18 23:30	1
Chloromethane	1.0	U	1.0	0.20	ug/L			06/12/18 23:30	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			06/12/18 23:30	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/12/18 23:30	1
1,1-Dichloroethene	1.0	U F1	1.0	0.19	ug/L			06/12/18 23:30	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			06/12/18 23:30	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/12/18 23:30	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/12/18 23:30	1
Ethylbenzene	1.0	U F1 F2	1.0	0.11	ug/L			06/12/18 23:30	1
2-Hexanone	10	U	10	0.54	ug/L			06/12/18 23:30	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/12/18 23:30	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			06/12/18 23:30	1
Styrene	1.0	U F1 F2	1.0	0.10	ug/L			06/12/18 23:30	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			06/12/18 23:30	1
Tetrachloroethene	1.0	U F1	1.0	0.15	ug/L			06/12/18 23:30	1
Toluene	1.0	U F1	1.0	0.14	ug/L			06/12/18 23:30	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/12/18 23:30	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/12/18 23:30	1
Xylenes, Total	2.0	U F1 F2	2.0	0.15	ug/L			06/12/18 23:30	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			06/12/18 23:30	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			06/12/18 23:30	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			06/12/18 23:30	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/12/18 23:30	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			06/12/18 23:30	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/12/18 23:30	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/12/18 23:30	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/12/18 23:30	1
Isopropylbenzene	1.0	U F1 F2	1.0	0.090	ug/L			06/12/18 23:30	1
Methyl acetate	10	U	10	1.7	ug/L			06/12/18 23:30	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			06/12/18 23:30	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/12/18 23:30	1
1,2,4-Trichlorobenzene	1.0	U F2	1.0	0.26	ug/L			06/12/18 23:30	1
1,2-Dichlorobenzene	1.0	U F1 F2	1.0	0.15	ug/L			06/12/18 23:30	1
1,3-Dichlorobenzene	1.0	U F1 F2	1.0	0.15	ug/L			06/12/18 23:30	1
1,4-Dichlorobenzene	1.0	U F1 F2	1.0	0.16	ug/L			06/12/18 23:30	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/12/18 23:30	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/12/18 23:30	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/12/18 23:30	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,2-Dichloroethane-d4 (Surr)	96		61 - 138		06/12/18 23:30	1
4-Bromofluorobenzene (Surr)	96		69 - 120		06/12/18 23:30	1
Toluene-d8 (Surr)	99		73 - 120		06/12/18 23:30	1
Dibromofluoromethane (Surr)	105		69 - 124		06/12/18 23:30	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-17322A-060518-DS-006

Date Collected: 06/05/18 14:45

Date Received: 06/07/18 09:30

Lab Sample ID: 240-96696-7

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/12/18 23:56	1
Benzene	1.0	U	1.0	0.13	ug/L			06/12/18 23:56	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/12/18 23:56	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/12/18 23:56	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/12/18 23:56	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/12/18 23:56	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			06/12/18 23:56	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/12/18 23:56	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			06/12/18 23:56	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/12/18 23:56	1
Chloroform	1.0	U	1.0	0.13	ug/L			06/12/18 23:56	1
Chloromethane	1.0	U	1.0	0.20	ug/L			06/12/18 23:56	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			06/12/18 23:56	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/12/18 23:56	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/12/18 23:56	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			06/12/18 23:56	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/12/18 23:56	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/12/18 23:56	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			06/12/18 23:56	1
2-Hexanone	10	U	10	0.54	ug/L			06/12/18 23:56	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/12/18 23:56	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			06/12/18 23:56	1
Styrene	1.0	U	1.0	0.10	ug/L			06/12/18 23:56	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			06/12/18 23:56	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/12/18 23:56	1
Toluene	1.0	U	1.0	0.14	ug/L			06/12/18 23:56	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/12/18 23:56	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/12/18 23:56	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			06/12/18 23:56	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			06/12/18 23:56	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			06/12/18 23:56	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			06/12/18 23:56	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/12/18 23:56	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			06/12/18 23:56	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/12/18 23:56	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/12/18 23:56	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/12/18 23:56	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			06/12/18 23:56	1
Methyl acetate	10	U	10	1.7	ug/L			06/12/18 23:56	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			06/12/18 23:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/12/18 23:56	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			06/12/18 23:56	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			06/12/18 23:56	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			06/12/18 23:56	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			06/12/18 23:56	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/12/18 23:56	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/12/18 23:56	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/12/18 23:56	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,2-Dichloroethane-d4 (Surr)	93		61 - 138		06/12/18 23:56	1
4-Bromofluorobenzene (Surr)	101		69 - 120		06/12/18 23:56	1
Toluene-d8 (Surr)	101		73 - 120		06/12/18 23:56	1
Dibromofluoromethane (Surr)	103		69 - 124		06/12/18 23:56	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-17322A-060618-DS-007

Date Collected: 06/06/18 09:10

Date Received: 06/07/18 09:30

Lab Sample ID: 240-96696-8

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/13/18 00:22	1
Benzene	1.0	U	1.0	0.13	ug/L			06/13/18 00:22	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/13/18 00:22	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/13/18 00:22	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/13/18 00:22	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/13/18 00:22	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			06/13/18 00:22	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/13/18 00:22	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			06/13/18 00:22	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/13/18 00:22	1
Chloroform	1.0	U	1.0	0.13	ug/L			06/13/18 00:22	1
Chloromethane	1.0	U	1.0	0.20	ug/L			06/13/18 00:22	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			06/13/18 00:22	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/13/18 00:22	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/13/18 00:22	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			06/13/18 00:22	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/13/18 00:22	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/13/18 00:22	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			06/13/18 00:22	1
2-Hexanone	10	U	10	0.54	ug/L			06/13/18 00:22	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/13/18 00:22	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			06/13/18 00:22	1
Styrene	1.0	U	1.0	0.10	ug/L			06/13/18 00:22	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			06/13/18 00:22	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/13/18 00:22	1
Toluene	1.0	U	1.0	0.14	ug/L			06/13/18 00:22	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/13/18 00:22	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/13/18 00:22	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			06/13/18 00:22	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			06/13/18 00:22	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			06/13/18 00:22	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			06/13/18 00:22	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/13/18 00:22	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			06/13/18 00:22	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/13/18 00:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/13/18 00:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/13/18 00:22	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			06/13/18 00:22	1
Methyl acetate	10	U	10	1.7	ug/L			06/13/18 00:22	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			06/13/18 00:22	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/13/18 00:22	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			06/13/18 00:22	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			06/13/18 00:22	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			06/13/18 00:22	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			06/13/18 00:22	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/13/18 00:22	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/13/18 00:22	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/13/18 00:22	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,2-Dichloroethane-d4 (Surr)	88		61 - 138		06/13/18 00:22	1
4-Bromofluorobenzene (Surr)	90		69 - 120		06/13/18 00:22	1
Toluene-d8 (Surr)	97		73 - 120		06/13/18 00:22	1
Dibromofluoromethane (Surr)	98		69 - 124		06/13/18 00:22	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-17322A-060618-DS-008

Date Collected: 06/06/18 10:00

Date Received: 06/07/18 09:30

Lab Sample ID: 240-96696-9

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/13/18 15:55	1
Benzene	1.0	U	1.0	0.13	ug/L			06/13/18 15:55	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/13/18 15:55	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/13/18 15:55	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/13/18 15:55	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/13/18 15:55	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			06/13/18 15:55	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/13/18 15:55	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			06/13/18 15:55	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/13/18 15:55	1
Chloroform	1.0	U	1.0	0.13	ug/L			06/13/18 15:55	1
Chloromethane	1.0	U	1.0	0.20	ug/L			06/13/18 15:55	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			06/13/18 15:55	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/13/18 15:55	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/13/18 15:55	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			06/13/18 15:55	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/13/18 15:55	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/13/18 15:55	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			06/13/18 15:55	1
2-Hexanone	10	U	10	0.54	ug/L			06/13/18 15:55	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/13/18 15:55	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			06/13/18 15:55	1
Styrene	1.0	U	1.0	0.10	ug/L			06/13/18 15:55	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			06/13/18 15:55	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/13/18 15:55	1
Toluene	1.0	U	1.0	0.14	ug/L			06/13/18 15:55	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/13/18 15:55	1
Vinyl chloride	0.83	J	1.0	0.20	ug/L			06/13/18 15:55	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			06/13/18 15:55	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			06/13/18 15:55	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			06/13/18 15:55	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			06/13/18 15:55	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/13/18 15:55	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			06/13/18 15:55	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/13/18 15:55	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/13/18 15:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/13/18 15:55	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			06/13/18 15:55	1
Methyl acetate	10	U	10	1.7	ug/L			06/13/18 15:55	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			06/13/18 15:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/13/18 15:55	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			06/13/18 15:55	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			06/13/18 15:55	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			06/13/18 15:55	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			06/13/18 15:55	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/13/18 15:55	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/13/18 15:55	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/13/18 15:55	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,2-Dichloroethane-d4 (Surr)	92		61 - 138		06/13/18 15:55	1
4-Bromofluorobenzene (Surr)	95		69 - 120		06/13/18 15:55	1
Toluene-d8 (Surr)	100		73 - 120		06/13/18 15:55	1
Dibromofluoromethane (Surr)	101		69 - 124		06/13/18 15:55	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-17322A-060618-DS-009

Date Collected: 06/06/18 10:35

Date Received: 06/07/18 09:30

Lab Sample ID: 240-96696-10

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/13/18 16:21	1
Benzene	1.0	U	1.0	0.13	ug/L			06/13/18 16:21	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/13/18 16:21	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/13/18 16:21	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/13/18 16:21	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/13/18 16:21	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			06/13/18 16:21	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/13/18 16:21	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			06/13/18 16:21	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/13/18 16:21	1
Chloroform	1.0	U	1.0	0.13	ug/L			06/13/18 16:21	1
Chloromethane	1.0	U	1.0	0.20	ug/L			06/13/18 16:21	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			06/13/18 16:21	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/13/18 16:21	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/13/18 16:21	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			06/13/18 16:21	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/13/18 16:21	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/13/18 16:21	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			06/13/18 16:21	1
2-Hexanone	10	U	10	0.54	ug/L			06/13/18 16:21	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/13/18 16:21	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			06/13/18 16:21	1
Styrene	1.0	U	1.0	0.10	ug/L			06/13/18 16:21	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			06/13/18 16:21	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/13/18 16:21	1
Toluene	1.0	U	1.0	0.14	ug/L			06/13/18 16:21	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/13/18 16:21	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/13/18 16:21	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			06/13/18 16:21	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			06/13/18 16:21	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			06/13/18 16:21	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			06/13/18 16:21	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/13/18 16:21	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			06/13/18 16:21	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/13/18 16:21	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/13/18 16:21	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/13/18 16:21	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			06/13/18 16:21	1
Methyl acetate	10	U	10	1.7	ug/L			06/13/18 16:21	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			06/13/18 16:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/13/18 16:21	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			06/13/18 16:21	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			06/13/18 16:21	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			06/13/18 16:21	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			06/13/18 16:21	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/13/18 16:21	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/13/18 16:21	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/13/18 16:21	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,2-Dichloroethane-d4 (Surr)	88		61 - 138		06/13/18 16:21	1
4-Bromofluorobenzene (Surr)	93		69 - 120		06/13/18 16:21	1
Toluene-d8 (Surr)	99		73 - 120		06/13/18 16:21	1
Dibromofluoromethane (Surr)	98		69 - 124		06/13/18 16:21	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-17322A-060618-DS-010

Date Collected: 06/06/18 11:50

Date Received: 06/07/18 09:30

Lab Sample ID: 240-96696-11

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/13/18 16:46	1
Benzene	1.0	U	1.0	0.13	ug/L			06/13/18 16:46	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/13/18 16:46	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/13/18 16:46	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/13/18 16:46	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/13/18 16:46	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			06/13/18 16:46	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/13/18 16:46	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			06/13/18 16:46	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/13/18 16:46	1
Chloroform	1.0	U	1.0	0.13	ug/L			06/13/18 16:46	1
Chloromethane	1.0	U	1.0	0.20	ug/L			06/13/18 16:46	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			06/13/18 16:46	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/13/18 16:46	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/13/18 16:46	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			06/13/18 16:46	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/13/18 16:46	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/13/18 16:46	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			06/13/18 16:46	1
2-Hexanone	10	U	10	0.54	ug/L			06/13/18 16:46	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/13/18 16:46	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			06/13/18 16:46	1
Styrene	1.0	U	1.0	0.10	ug/L			06/13/18 16:46	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			06/13/18 16:46	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/13/18 16:46	1
Toluene	1.0	U	1.0	0.14	ug/L			06/13/18 16:46	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/13/18 16:46	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/13/18 16:46	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			06/13/18 16:46	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			06/13/18 16:46	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			06/13/18 16:46	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			06/13/18 16:46	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/13/18 16:46	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			06/13/18 16:46	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/13/18 16:46	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/13/18 16:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/13/18 16:46	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			06/13/18 16:46	1
Methyl acetate	10	U	10	1.7	ug/L			06/13/18 16:46	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			06/13/18 16:46	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/13/18 16:46	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			06/13/18 16:46	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			06/13/18 16:46	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			06/13/18 16:46	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			06/13/18 16:46	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/13/18 16:46	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/13/18 16:46	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/13/18 16:46	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,2-Dichloroethane-d4 (Surr)	93		61 - 138		06/13/18 16:46	1
4-Bromofluorobenzene (Surr)	89		69 - 120		06/13/18 16:46	1
Toluene-d8 (Surr)	104		73 - 120		06/13/18 16:46	1
Dibromofluoromethane (Surr)	102		69 - 124		06/13/18 16:46	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: GW-17322A-060618-DS-011

Date Collected: 06/06/18 12:45

Date Received: 06/07/18 09:30

Lab Sample ID: 240-96696-12

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/13/18 17:12	1
Benzene	1.0	U	1.0	0.13	ug/L			06/13/18 17:12	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/13/18 17:12	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/13/18 17:12	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/13/18 17:12	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/13/18 17:12	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			06/13/18 17:12	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/13/18 17:12	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			06/13/18 17:12	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/13/18 17:12	1
Chloroform	1.0	U	1.0	0.13	ug/L			06/13/18 17:12	1
Chloromethane	1.0	U	1.0	0.20	ug/L			06/13/18 17:12	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			06/13/18 17:12	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/13/18 17:12	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/13/18 17:12	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			06/13/18 17:12	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/13/18 17:12	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/13/18 17:12	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			06/13/18 17:12	1
2-Hexanone	10	U	10	0.54	ug/L			06/13/18 17:12	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/13/18 17:12	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			06/13/18 17:12	1
Styrene	1.0	U	1.0	0.10	ug/L			06/13/18 17:12	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			06/13/18 17:12	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/13/18 17:12	1
Toluene	1.0	U	1.0	0.14	ug/L			06/13/18 17:12	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/13/18 17:12	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/13/18 17:12	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			06/13/18 17:12	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			06/13/18 17:12	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			06/13/18 17:12	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			06/13/18 17:12	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/13/18 17:12	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			06/13/18 17:12	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/13/18 17:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/13/18 17:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/13/18 17:12	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			06/13/18 17:12	1
Methyl acetate	10	U	10	1.7	ug/L			06/13/18 17:12	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			06/13/18 17:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/13/18 17:12	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			06/13/18 17:12	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			06/13/18 17:12	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			06/13/18 17:12	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			06/13/18 17:12	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/13/18 17:12	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/13/18 17:12	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/13/18 17:12	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,2-Dichloroethane-d4 (Surr)	96		61 - 138		06/13/18 17:12	1
4-Bromofluorobenzene (Surr)	94		69 - 120		06/13/18 17:12	1
Toluene-d8 (Surr)	100		73 - 120		06/13/18 17:12	1
Dibromofluoromethane (Surr)	99		69 - 124		06/13/18 17:12	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: GW-17322A-060518-DS-001

Date Collected: 06/05/18 09:50

Date Received: 06/07/18 09:30

Lab Sample ID: 240-96696-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	50	U	50	34	ug/L		06/08/18 14:00	06/12/18 21:22	1
Lead	1.0	U	1.0	0.45	ug/L		06/08/18 14:00	06/12/18 21:22	1
Vanadium	5.0	U	5.0	0.82	ug/L		06/08/18 14:00	06/12/18 21:22	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: GW-17322A-060518-DS-002

Date Collected: 06/05/18 11:00

Date Received: 06/07/18 09:30

Lab Sample ID: 240-96696-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1800		50	34	ug/L		06/08/18 14:00	06/12/18 21:28	1
Lead	0.87	J	1.0	0.45	ug/L		06/08/18 14:00	06/12/18 21:28	1
Vanadium	3.3	J	5.0	0.82	ug/L		06/08/18 14:00	06/12/18 21:28	1

QC Association Summary

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

GC/MS VOA

Analysis Batch: 331276

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-96696-1	TB-17322A-060518-DS	Total/NA	Water	8260B	
240-96696-4	GW-17322A-060518-DS-003	Total/NA	Water	8260B	
240-96696-5	GW-17322A-060518-DS-004	Total/NA	Water	8260B	
240-96696-6	GW-17322A-060518-DS-005	Total/NA	Water	8260B	
240-96696-7	GW-17322A-060518-DS-006	Total/NA	Water	8260B	
240-96696-8	GW-17322A-060618-DS-007	Total/NA	Water	8260B	
MB 240-331276/5	Method Blank	Total/NA	Water	8260B	
LCS 240-331276/4	Lab Control Sample	Total/NA	Water	8260B	
240-96696-6 MS	GW-17322A-060518-DS-005	Total/NA	Water	8260B	
240-96696-6 MSD	GW-17322A-060518-DS-005	Total/NA	Water	8260B	

Analysis Batch: 331470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-96696-9	GW-17322A-060618-DS-008	Total/NA	Water	8260B	
240-96696-10	GW-17322A-060618-DS-009	Total/NA	Water	8260B	
240-96696-11	GW-17322A-060618-DS-010	Total/NA	Water	8260B	
240-96696-12	GW-17322A-060618-DS-011	Total/NA	Water	8260B	
MB 240-331470/5	Method Blank	Total/NA	Water	8260B	
LCS 240-331470/4	Lab Control Sample	Total/NA	Water	8260B	

Metals

Prep Batch: 330712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-96696-2	GW-17322A-060518-DS-001	Total Recoverable	Water	3005A	
240-96696-3	GW-17322A-060518-DS-002	Total Recoverable	Water	3005A	
MB 240-330712/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-330712/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 331451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-96696-2	GW-17322A-060518-DS-001	Total Recoverable	Water	6020	330712
240-96696-3	GW-17322A-060518-DS-002	Total Recoverable	Water	6020	330712
MB 240-330712/1-A	Method Blank	Total Recoverable	Water	6020	330712
LCS 240-330712/3-A	Lab Control Sample	Total Recoverable	Water	6020	330712

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-331276/5

Matrix: Water

Analysis Batch: 331276

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/12/18 14:55	1
Benzene	1.0	U	1.0	0.13	ug/L			06/12/18 14:55	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/12/18 14:55	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/12/18 14:55	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/12/18 14:55	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/12/18 14:55	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			06/12/18 14:55	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/12/18 14:55	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			06/12/18 14:55	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/12/18 14:55	1
Chloroform	1.0	U	1.0	0.13	ug/L			06/12/18 14:55	1
Chloromethane	1.0	U	1.0	0.20	ug/L			06/12/18 14:55	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			06/12/18 14:55	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/12/18 14:55	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/12/18 14:55	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			06/12/18 14:55	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/12/18 14:55	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/12/18 14:55	1
Ethylbenzene	0.112	J	1.0	0.11	ug/L			06/12/18 14:55	1
2-Hexanone	10	U	10	0.54	ug/L			06/12/18 14:55	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/12/18 14:55	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			06/12/18 14:55	1
Styrene	0.168	J	1.0	0.10	ug/L			06/12/18 14:55	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			06/12/18 14:55	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/12/18 14:55	1
Toluene	1.0	U	1.0	0.14	ug/L			06/12/18 14:55	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/12/18 14:55	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/12/18 14:55	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			06/12/18 14:55	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			06/12/18 14:55	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			06/12/18 14:55	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			06/12/18 14:55	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/12/18 14:55	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			06/12/18 14:55	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/12/18 14:55	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/12/18 14:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/12/18 14:55	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			06/12/18 14:55	1
Methyl acetate	10	U	10	1.7	ug/L			06/12/18 14:55	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			06/12/18 14:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/12/18 14:55	1
1,2,4-Trichlorobenzene	0.894	J	1.0	0.26	ug/L			06/12/18 14:55	1
1,2-Dichlorobenzene	0.260	J	1.0	0.15	ug/L			06/12/18 14:55	1
1,3-Dichlorobenzene	0.221	J	1.0	0.15	ug/L			06/12/18 14:55	1
1,4-Dichlorobenzene	0.324	J	1.0	0.16	ug/L			06/12/18 14:55	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/12/18 14:55	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/12/18 14:55	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/12/18 14:55	1

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		61 - 138		06/12/18 14:55	1
4-Bromofluorobenzene (Surr)	95		69 - 120		06/12/18 14:55	1
Toluene-d8 (Surr)	102		73 - 120		06/12/18 14:55	1
Dibromofluoromethane (Surr)	100		69 - 124		06/12/18 14:55	1

Lab Sample ID: LCS 240-331276/4

Matrix: Water

Analysis Batch: 331276

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	100	107		ug/L		107	35 - 131
Benzene	50.0	48.0		ug/L		96	79 - 120
Bromodichloromethane	50.0	49.2		ug/L		98	79 - 125
Bromoform	50.0	51.0		ug/L		102	55 - 145
Bromomethane	20.0	16.8		ug/L		84	17 - 158
2-Butanone (MEK)	100	102		ug/L		102	43 - 149
Carbon disulfide	50.0	51.6		ug/L		103	49 - 141
Carbon tetrachloride	50.0	46.4		ug/L		93	55 - 171
Chlorobenzene	50.0	48.3		ug/L		97	80 - 120
Chloroethane	20.0	17.8		ug/L		89	10 - 149
Chloroform	50.0	47.7		ug/L		95	80 - 120
Chloromethane	20.0	16.5		ug/L		82	59 - 124
1,1-Dichloroethane	50.0	46.6		ug/L		93	74 - 120
1,2-Dichloroethane	50.0	47.1		ug/L		94	68 - 133
1,1-Dichloroethene	50.0	51.1		ug/L		102	65 - 127
1,2-Dichloropropane	50.0	47.2		ug/L		94	78 - 127
cis-1,3-Dichloropropene	50.0	51.6		ug/L		103	75 - 120
trans-1,3-Dichloropropene	50.0	40.3		ug/L		81	67 - 120
Ethylbenzene	50.0	47.9		ug/L		96	80 - 120
2-Hexanone	100	101		ug/L		101	28 - 169
Methylene Chloride	50.0	47.8		ug/L		96	64 - 140
4-Methyl-2-pentanone (MIBK)	100	97.9		ug/L		98	53 - 144
Styrene	50.0	49.2		ug/L		98	80 - 121
1,1,2,2-Tetrachloroethane	50.0	50.5		ug/L		101	58 - 122
Tetrachloroethene	50.0	50.0		ug/L		100	80 - 122
Toluene	50.0	47.2		ug/L		94	78 - 120
Trichloroethene	50.0	48.9		ug/L		98	76 - 124
Vinyl chloride	20.0	16.2		ug/L		81	65 - 124
Xylenes, Total	100	97.6		ug/L		98	80 - 120
1,1,1-Trichloroethane	50.0	50.7		ug/L		101	64 - 147
1,1,2-Trichloroethane	50.0	50.7		ug/L		101	76 - 121
Cyclohexane	50.0	45.6		ug/L		91	66 - 135
1,2-Dibromo-3-Chloropropane	50.0	44.6		ug/L		89	50 - 130
1,2-Dibromoethane	50.0	51.1		ug/L		102	80 - 120
Dichlorodifluoromethane	20.0	14.8		ug/L		74	42 - 141
cis-1,2-Dichloroethene	50.0	48.9		ug/L		98	77 - 120
trans-1,2-Dichloroethene	50.0	50.9		ug/L		102	74 - 124
Isopropylbenzene	50.0	50.3		ug/L		101	80 - 128
Methyl acetate	100	100		ug/L		100	63 - 137
Methyl tert-butyl ether	50.0	41.5		ug/L		83	73 - 120
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	50.0		ug/L		100	65 - 144
1,2,4-Trichlorobenzene	50.0	46.0		ug/L		92	34 - 141
1,2-Dichlorobenzene	50.0	49.1		ug/L		98	80 - 120

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-331276/4

Matrix: Water

Analysis Batch: 331276

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichlorobenzene	50.0	48.0		ug/L		96	80 - 120
1,4-Dichlorobenzene	50.0	47.8		ug/L		96	80 - 120
Trichlorofluoromethane	20.0	18.3		ug/L		92	27 - 176
Dibromochloromethane	50.0	53.5		ug/L		107	64 - 129
Methylcyclohexane	50.0	45.1		ug/L		90	63 - 141

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	90		61 - 138
4-Bromofluorobenzene (Surr)	97		69 - 120
Toluene-d8 (Surr)	104		73 - 120
Dibromofluoromethane (Surr)	102		69 - 124

Lab Sample ID: 240-96696-6 MS

Matrix: Water

Analysis Batch: 331276

Client Sample ID: GW-17322A-060518-DS-005

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	10	U	100	106		ug/L		106	19 - 133
Benzene	1.0	U	50.0	38.4		ug/L		77	69 - 127
Bromodichloromethane	1.0	U	50.0	40.5		ug/L		81	75 - 128
Bromoform	1.0	U	50.0	42.3		ug/L		85	61 - 135
Bromomethane	1.0	U	20.0	13.0		ug/L		65	10 - 148
2-Butanone (MEK)	10	U	100	107		ug/L		107	34 - 153
Carbon disulfide	5.0	U	50.0	33.0		ug/L		66	46 - 143
Carbon tetrachloride	1.0	U	50.0	27.9		ug/L		56	53 - 175
Chlorobenzene	1.0	U F1 F2	50.0	33.4	F1	ug/L		67	76 - 120
Chloroethane	1.0	U	20.0	12.8		ug/L		64	10 - 141
Chloroform	1.0	U	50.0	40.3		ug/L		81	74 - 125
Chloromethane	1.0	U	20.0	13.4		ug/L		67	34 - 127
1,1-Dichloroethane	1.0	U	50.0	38.5		ug/L		77	69 - 122
1,2-Dichloroethane	1.0	U	50.0	44.3		ug/L		89	64 - 138
1,1-Dichloroethene	1.0	U F1	50.0	32.0		ug/L		64	62 - 127
1,2-Dichloropropane	1.0	U	50.0	41.4		ug/L		83	72 - 131
cis-1,3-Dichloropropene	1.0	U	50.0	37.7		ug/L		75	68 - 120
trans-1,3-Dichloropropene	1.0	U	50.0	30.3		ug/L		61	59 - 120
Ethylbenzene	1.0	U F1 F2	50.0	28.7	F1	ug/L		57	72 - 121
2-Hexanone	10	U	100	108		ug/L		108	21 - 184
Methylene Chloride	5.0	U	50.0	38.7		ug/L		77	52 - 137
4-Methyl-2-pentanone (MIBK)	10	U	100	106		ug/L		106	53 - 147
Styrene	1.0	U F1 F2	50.0	31.5	F1	ug/L		63	74 - 125
1,1,2,2-Tetrachloroethane	1.0	U	50.0	47.2		ug/L		94	51 - 123
Tetrachloroethene	1.0	U F1	50.0	30.3	F1	ug/L		61	69 - 126
Toluene	1.0	U F1	50.0	33.8	F1	ug/L		68	69 - 125
Trichloroethene	1.0	U	50.0	35.7		ug/L		71	68 - 129
Vinyl chloride	1.0	U	20.0	12.0		ug/L		60	55 - 123
Xylenes, Total	2.0	U F1 F2	100	58.5	F1	ug/L		59	71 - 122
1,1,1-Trichloroethane	1.0	U	50.0	33.4		ug/L		67	57 - 156
1,1,2-Trichloroethane	1.0	U	50.0	48.5		ug/L		97	68 - 127

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-96696-6 MS

Matrix: Water

Analysis Batch: 331276

Client Sample ID: GW-17322A-060518-DS-005

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyclohexane	1.0	U	50.0	30.9		ug/L		62	56 - 135
1,2-Dibromo-3-Chloropropane	1.0	U	50.0	38.8		ug/L		78	48 - 130
1,2-Dibromoethane	1.0	U	50.0	47.9		ug/L		96	73 - 121
Dichlorodifluoromethane	1.0	U	20.0	10.9		ug/L		55	45 - 130
cis-1,2-Dichloroethene	1.0	U	50.0	41.6		ug/L		83	69 - 127
trans-1,2-Dichloroethene	1.0	U	50.0	39.5		ug/L		79	66 - 131
Isopropylbenzene	1.0	U F1 F2	50.0	27.9	F1	ug/L		56	70 - 132
Methyl acetate	10	U	100	94.4		ug/L		94	52 - 139
Methyl tert-butyl ether	1.0	U	50.0	38.8		ug/L		78	67 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	50.0	36.0		ug/L		72	58 - 137
1,2,4-Trichlorobenzene	1.0	U F2	50.0	22.3		ug/L		45	26 - 138
1,2-Dichlorobenzene	1.0	U F1 F2	50.0	29.6	F1	ug/L		59	70 - 120
1,3-Dichlorobenzene	1.0	U F1 F2	50.0	26.0	F1	ug/L		52	71 - 120
1,4-Dichlorobenzene	1.0	U F1 F2	50.0	25.8	F1	ug/L		52	72 - 120
Trichlorofluoromethane	1.0	U	20.0	11.7		ug/L		59	28 - 172
Dibromochloromethane	1.0	U	50.0	44.9		ug/L		90	62 - 131
Methylcyclohexane	1.0	U	50.0	29.9		ug/L		60	46 - 139

Surrogate	MS %Recovery	MS Qualifier	MS Limits
1,2-Dichloroethane-d4 (Surr)	89		61 - 138
4-Bromofluorobenzene (Surr)	90		69 - 120
Toluene-d8 (Surr)	103		73 - 120
Dibromofluoromethane (Surr)	99		69 - 124

Lab Sample ID: 240-96696-6 MSD

Matrix: Water

Analysis Batch: 331276

Client Sample ID: GW-17322A-060518-DS-005

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	10	U	100	110		ug/L		110	19 - 133	3	35
Benzene	1.0	U	50.0	39.3		ug/L		79	69 - 127	2	10
Bromodichloromethane	1.0	U	50.0	42.3		ug/L		85	75 - 128	4	13
Bromoform	1.0	U	50.0	45.5		ug/L		91	61 - 135	7	13
Bromomethane	1.0	U	20.0	13.2		ug/L		66	10 - 148	1	35
2-Butanone (MEK)	10	U	100	111		ug/L		111	34 - 153	4	23
Carbon disulfide	5.0	U	50.0	33.0		ug/L		66	46 - 143	0	18
Carbon tetrachloride	1.0	U	50.0	28.7		ug/L		57	53 - 175	3	17
Chlorobenzene	1.0	U F1 F2	50.0	38.8	F2	ug/L		78	76 - 120	15	12
Chloroethane	1.0	U	20.0	12.3		ug/L		61	10 - 141	4	35
Chloroform	1.0	U	50.0	40.8		ug/L		82	74 - 125	1	11
Chloromethane	1.0	U	20.0	13.1		ug/L		66	34 - 127	2	25
1,1-Dichloroethane	1.0	U	50.0	38.2		ug/L		76	69 - 122	1	11
1,2-Dichloroethane	1.0	U	50.0	44.9		ug/L		90	64 - 138	1	11
1,1-Dichloroethene	1.0	U F1	50.0	30.0	F1	ug/L		60	62 - 127	7	14
1,2-Dichloropropane	1.0	U	50.0	42.3		ug/L		85	72 - 131	2	12
cis-1,3-Dichloropropene	1.0	U	50.0	41.1		ug/L		82	68 - 120	9	13
trans-1,3-Dichloropropene	1.0	U	50.0	32.7		ug/L		65	59 - 120	8	14

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-96696-6 MSD

Matrix: Water

Analysis Batch: 331276

Client Sample ID: GW-17322A-060518-DS-005

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene	1.0	U F1 F2	50.0	35.9	F2	ug/L		72	72 - 121	22	15
2-Hexanone	10	U	100	113		ug/L		113	21 - 184	4	12
Methylene Chloride	5.0	U	50.0	37.9		ug/L		76	52 - 137	2	12
4-Methyl-2-pentanone (MIBK)	10	U	100	109		ug/L		109	53 - 147	3	16
Styrene	1.0	U F1 F2	50.0	38.8	F2	ug/L		78	74 - 125	21	14
1,1,2,2-Tetrachloroethane	1.0	U	50.0	50.5		ug/L		101	51 - 123	7	17
Tetrachloroethene	1.0	U F1	50.0	34.9		ug/L		70	69 - 126	14	18
Toluene	1.0	U F1	50.0	36.5		ug/L		73	69 - 125	8	14
Trichloroethene	1.0	U	50.0	38.0		ug/L		76	68 - 129	6	12
Vinyl chloride	1.0	U	20.0	11.7		ug/L		58	55 - 123	3	12
Xylenes, Total	2.0	U F1 F2	100	72.4	F2	ug/L		72	71 - 122	21	14
1,1,1-Trichloroethane	1.0	U	50.0	34.9		ug/L		70	57 - 156	4	13
1,1,2-Trichloroethane	1.0	U	50.0	49.9		ug/L		100	68 - 127	3	11
Cyclohexane	1.0	U	50.0	31.1		ug/L		62	56 - 135	1	35
1,2-Dibromo-3-Chloropropane	1.0	U	50.0	42.6		ug/L		85	48 - 130	9	31
1,2-Dibromoethane	1.0	U	50.0	49.7		ug/L		99	73 - 121	4	12
Dichlorodifluoromethane	1.0	U	20.0	10.7		ug/L		53	45 - 130	3	34
cis-1,2-Dichloroethene	1.0	U	50.0	41.7		ug/L		83	69 - 127	0	11
trans-1,2-Dichloroethene	1.0	U	50.0	40.3		ug/L		81	66 - 131	2	11
Isopropylbenzene	1.0	U F1 F2	50.0	35.6	F2	ug/L		71	70 - 132	24	16
Methyl acetate	10	U	100	98.3		ug/L		98	52 - 139	4	14
Methyl tert-butyl ether	1.0	U	50.0	39.5		ug/L		79	67 - 125	2	12
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	50.0	33.5		ug/L		67	58 - 137	7	35
1,2,4-Trichlorobenzene	1.0	U F2	50.0	31.9	F2	ug/L		64	26 - 138	36	35
1,2-Dichlorobenzene	1.0	U F1 F2	50.0	39.2	F2	ug/L		78	70 - 120	28	19
1,3-Dichlorobenzene	1.0	U F1 F2	50.0	36.2	F2	ug/L		72	71 - 120	33	18
1,4-Dichlorobenzene	1.0	U F1 F2	50.0	35.8	F2	ug/L		72	72 - 120	33	17
Trichlorofluoromethane	1.0	U	20.0	11.7		ug/L		58	28 - 172	0	26
Dibromochloromethane	1.0	U	50.0	48.4		ug/L		97	62 - 131	8	15
Methylcyclohexane	1.0	U	50.0	30.8		ug/L		62	46 - 139	3	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	87		61 - 138
4-Bromofluorobenzene (Surr)	91		69 - 120
Toluene-d8 (Surr)	98		73 - 120
Dibromofluoromethane (Surr)	99		69 - 124

Lab Sample ID: MB 240-331470/5

Matrix: Water

Analysis Batch: 331470

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			06/13/18 15:04	1
Benzene	1.0	U	1.0	0.13	ug/L			06/13/18 15:04	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			06/13/18 15:04	1
Bromoform	1.0	U	1.0	0.76	ug/L			06/13/18 15:04	1
Bromomethane	1.0	U	1.0	0.42	ug/L			06/13/18 15:04	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-331470/5

Matrix: Water

Analysis Batch: 331470

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	10	U	10	1.2	ug/L			06/13/18 15:04	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			06/13/18 15:04	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			06/13/18 15:04	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			06/13/18 15:04	1
Chloroethane	1.0	U	1.0	0.83	ug/L			06/13/18 15:04	1
Chloroform	1.0	U	1.0	0.13	ug/L			06/13/18 15:04	1
Chloromethane	1.0	U	1.0	0.20	ug/L			06/13/18 15:04	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			06/13/18 15:04	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			06/13/18 15:04	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/13/18 15:04	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			06/13/18 15:04	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			06/13/18 15:04	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			06/13/18 15:04	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			06/13/18 15:04	1
2-Hexanone	10	U	10	0.54	ug/L			06/13/18 15:04	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			06/13/18 15:04	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			06/13/18 15:04	1
Styrene	0.116	J	1.0	0.10	ug/L			06/13/18 15:04	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			06/13/18 15:04	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			06/13/18 15:04	1
Toluene	1.0	U	1.0	0.14	ug/L			06/13/18 15:04	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			06/13/18 15:04	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			06/13/18 15:04	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			06/13/18 15:04	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			06/13/18 15:04	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			06/13/18 15:04	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			06/13/18 15:04	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			06/13/18 15:04	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			06/13/18 15:04	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			06/13/18 15:04	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			06/13/18 15:04	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			06/13/18 15:04	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			06/13/18 15:04	1
Methyl acetate	10	U	10	1.7	ug/L			06/13/18 15:04	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			06/13/18 15:04	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			06/13/18 15:04	1
1,2,4-Trichlorobenzene	0.780	J	1.0	0.26	ug/L			06/13/18 15:04	1
1,2-Dichlorobenzene	0.280	J	1.0	0.15	ug/L			06/13/18 15:04	1
1,3-Dichlorobenzene	0.211	J	1.0	0.15	ug/L			06/13/18 15:04	1
1,4-Dichlorobenzene	0.281	J	1.0	0.16	ug/L			06/13/18 15:04	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			06/13/18 15:04	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			06/13/18 15:04	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			06/13/18 15:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		61 - 138		06/13/18 15:04	1
4-Bromofluorobenzene (Surr)	94		69 - 120		06/13/18 15:04	1
Toluene-d8 (Surr)	96		73 - 120		06/13/18 15:04	1

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-331470/5

Matrix: Water

Analysis Batch: 331470

Client Sample ID: Method Blank

Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	102		69 - 124		06/13/18 15:04	1

Lab Sample ID: LCS 240-331470/4

Matrix: Water

Analysis Batch: 331470

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	100	102		ug/L		102	35 - 131
Benzene	50.0	48.0		ug/L		96	79 - 120
Bromodichloromethane	50.0	48.7		ug/L		97	79 - 125
Bromoform	50.0	51.2		ug/L		102	55 - 145
Bromomethane	20.0	16.1		ug/L		80	17 - 158
2-Butanone (MEK)	100	104		ug/L		104	43 - 149
Carbon disulfide	50.0	49.0		ug/L		98	49 - 141
Carbon tetrachloride	50.0	48.2		ug/L		96	55 - 171
Chlorobenzene	50.0	47.9		ug/L		96	80 - 120
Chloroethane	20.0	16.8		ug/L		84	10 - 149
Chloroform	50.0	47.3		ug/L		95	80 - 120
Chloromethane	20.0	16.6		ug/L		83	59 - 124
1,1-Dichloroethane	50.0	46.0		ug/L		92	74 - 120
1,2-Dichloroethane	50.0	46.3		ug/L		93	68 - 133
1,1-Dichloroethene	50.0	48.3		ug/L		97	65 - 127
1,2-Dichloropropane	50.0	47.5		ug/L		95	78 - 127
cis-1,3-Dichloropropene	50.0	50.8		ug/L		102	75 - 120
trans-1,3-Dichloropropene	50.0	40.3		ug/L		81	67 - 120
Ethylbenzene	50.0	48.8		ug/L		98	80 - 120
2-Hexanone	100	105		ug/L		105	28 - 169
Methylene Chloride	50.0	45.8		ug/L		92	64 - 140
4-Methyl-2-pentanone (MIBK)	100	101		ug/L		101	53 - 144
Styrene	50.0	48.3		ug/L		97	80 - 121
1,1,2,2-Tetrachloroethane	50.0	49.5		ug/L		99	58 - 122
Tetrachloroethene	50.0	52.7		ug/L		105	80 - 122
Toluene	50.0	47.2		ug/L		94	78 - 120
Trichloroethene	50.0	51.2		ug/L		102	76 - 124
Vinyl chloride	20.0	16.2		ug/L		81	65 - 124
Xylenes, Total	100	97.0		ug/L		97	80 - 120
1,1,1-Trichloroethane	50.0	51.9		ug/L		104	64 - 147
1,1,2-Trichloroethane	50.0	50.6		ug/L		101	76 - 121
Cyclohexane	50.0	47.8		ug/L		96	66 - 135
1,2-Dibromo-3-Chloropropane	50.0	44.4		ug/L		89	50 - 130
1,2-Dibromoethane	50.0	50.6		ug/L		101	80 - 120
Dichlorodifluoromethane	20.0	15.0		ug/L		75	42 - 141
cis-1,2-Dichloroethene	50.0	48.7		ug/L		97	77 - 120
trans-1,2-Dichloroethene	50.0	52.1		ug/L		104	74 - 124
Isopropylbenzene	50.0	51.8		ug/L		104	80 - 128
Methyl acetate	100	99.6		ug/L		100	63 - 137
Methyl tert-butyl ether	50.0	40.7		ug/L		81	73 - 120

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-331470/4

Matrix: Water

Analysis Batch: 331470

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	51.7		ug/L		103	65 - 144
1,2,4-Trichlorobenzene	50.0	47.3		ug/L		95	34 - 141
1,2-Dichlorobenzene	50.0	48.6		ug/L		97	80 - 120
1,3-Dichlorobenzene	50.0	48.3		ug/L		97	80 - 120
1,4-Dichlorobenzene	50.0	48.4		ug/L		97	80 - 120
Trichlorofluoromethane	20.0	18.0		ug/L		90	27 - 176
Dibromochloromethane	50.0	54.1		ug/L		108	64 - 129
Methylcyclohexane	50.0	47.2		ug/L		94	63 - 141

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	90		61 - 138
4-Bromofluorobenzene (Surr)	94		69 - 120
Toluene-d8 (Surr)	103		73 - 120
Dibromofluoromethane (Surr)	99		69 - 124

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-330712/1-A

Matrix: Water

Analysis Batch: 331451

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 330712

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	50	U	50	34	ug/L		06/08/18 14:00	06/12/18 19:20	1
Lead	1.0	U	1.0	0.45	ug/L		06/08/18 14:00	06/12/18 19:20	1
Vanadium	5.0	U	5.0	0.82	ug/L		06/08/18 14:00	06/12/18 19:20	1

Lab Sample ID: LCS 240-330712/3-A

Matrix: Water

Analysis Batch: 331451

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 330712

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	10000	9590		ug/L		96	80 - 120
Lead	1000	994		ug/L		99	80 - 120
Vanadium	1000	983		ug/L		98	80 - 120

TestAmerica Canton

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (61-138)	BFB (69-120)	TOL (73-120)	DBFM (69-124)
240-96696-1	TB-17322A-060518-DS	98	98	103	105
240-96696-4	GW-17322A-060518-DS-003	93	100	98	100
240-96696-5	GW-17322A-060518-DS-004	91	100	98	100
240-96696-6	GW-17322A-060518-DS-005	96	96	99	105
240-96696-6 MS	GW-17322A-060518-DS-005	89	90	103	99
240-96696-6 MSD	GW-17322A-060518-DS-005	87	91	98	99
240-96696-7	GW-17322A-060518-DS-006	93	101	101	103
240-96696-8	GW-17322A-060618-DS-007	88	90	97	98
240-96696-9	GW-17322A-060618-DS-008	92	95	100	101
240-96696-10	GW-17322A-060618-DS-009	88	93	99	98
240-96696-11	GW-17322A-060618-DS-010	93	89	104	102
240-96696-12	GW-17322A-060618-DS-011	96	94	100	99
LCS 240-331276/4	Lab Control Sample	90	97	104	102
LCS 240-331470/4	Lab Control Sample	90	94	103	99
MB 240-331276/5	Method Blank	91	95	102	100
MB 240-331470/5	Method Blank	92	94	96	102

Surrogate Legend

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

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Client Sample ID: TB-17322A-060518-DS

Date Collected: 06/05/18 00:00

Date Received: 06/07/18 09:30

Lab Sample ID: 240-96696-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	331276	06/12/18 23:01	SAM	TAL CAN

Client Sample ID: GW-17322A-060518-DS-001

Date Collected: 06/05/18 09:50

Date Received: 06/07/18 09:30

Lab Sample ID: 240-96696-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			330712	06/08/18 14:00	MBB	TAL CAN
Total Recoverable	Analysis	6020		1	331451	06/12/18 21:22	RKT	TAL CAN

Client Sample ID: GW-17322A-060518-DS-002

Date Collected: 06/05/18 11:00

Date Received: 06/07/18 09:30

Lab Sample ID: 240-96696-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			330712	06/08/18 14:00	MBB	TAL CAN
Total Recoverable	Analysis	6020		1	331451	06/12/18 21:28	RKT	TAL CAN

Client Sample ID: GW-17322A-060518-DS-003

Date Collected: 06/05/18 12:10

Date Received: 06/07/18 09:30

Lab Sample ID: 240-96696-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	331276	06/12/18 22:06	SAM	TAL CAN

Client Sample ID: GW-17322A-060518-DS-004

Date Collected: 06/05/18 12:15

Date Received: 06/07/18 09:30

Lab Sample ID: 240-96696-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	331276	06/12/18 22:32	SAM	TAL CAN

Client Sample ID: GW-17322A-060518-DS-005

Date Collected: 06/05/18 14:10

Date Received: 06/07/18 09:30

Lab Sample ID: 240-96696-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	331276	06/12/18 23:30	SAM	TAL CAN

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Lab Chronicle

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Client Sample ID: GW-17322A-060518-DS-006

Lab Sample ID: 240-96696-7

Date Collected: 06/05/18 14:45

Matrix: Water

Date Received: 06/07/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	331276	06/12/18 23:56	SAM	TAL CAN

Client Sample ID: GW-17322A-060618-DS-007

Lab Sample ID: 240-96696-8

Date Collected: 06/06/18 09:10

Matrix: Water

Date Received: 06/07/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	331276	06/13/18 00:22	SAM	TAL CAN

Client Sample ID: GW-17322A-060618-DS-008

Lab Sample ID: 240-96696-9

Date Collected: 06/06/18 10:00

Matrix: Water

Date Received: 06/07/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	331470	06/13/18 15:55	SAM	TAL CAN

Client Sample ID: GW-17322A-060618-DS-009

Lab Sample ID: 240-96696-10

Date Collected: 06/06/18 10:35

Matrix: Water

Date Received: 06/07/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	331470	06/13/18 16:21	SAM	TAL CAN

Client Sample ID: GW-17322A-060618-DS-010

Lab Sample ID: 240-96696-11

Date Collected: 06/06/18 11:50

Matrix: Water

Date Received: 06/07/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	331470	06/13/18 16:46	SAM	TAL CAN

Client Sample ID: GW-17322A-060618-DS-011

Lab Sample ID: 240-96696-12

Date Collected: 06/06/18 12:45

Matrix: Water

Date Received: 06/07/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	331470	06/13/18 17:12	SAM	TAL CAN

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TestAmerica Canton

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: 17322A-T06, PCC Validation

TestAmerica Job ID: 240-96696-1

Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-19
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-18 *
Illinois	NELAP	5	200004	07-31-18 *
Kansas	NELAP	7	E-10336	01-31-19
Kentucky (UST)	State Program	4	58	02-23-19
Kentucky (WW)	State Program	4	98016	12-31-18
Minnesota	NELAP	5	039-999-348	12-31-18
Minnesota (Petrofund)	State Program	1	3506	07-31-18 *
Nevada	State Program	9	OH-000482008A	07-31-18 *
New Jersey	NELAP	2	OH001	06-30-18 *
New York	NELAP	2	10975	03-31-19
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-19
Pennsylvania	NELAP	3	68-00340	08-31-18 *
Texas	NELAP	6	T104704517-17-9	08-31-18 *
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-18 *
Washington	State Program	10	C971	01-12-19
West Virginia DEP	State Program	3	210	12-31-18

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

TestAmerica Canton

157812

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact Company Name: GHD Services, Inc. Address: 26850 Haggerty Rd. City/State/Zip: Farmington Hills, MI Phone: 248-842-7400 Fax: _____ Project Name: RACER - PCC Validation Site: M1 PO # 017322A		Project Manager: Tom Kinney Tel/Fax: 248-842-3400 Analysis Turnaround Time ☒ CALENDAR DAYS ☐ WORKING DAYS TAT if different from Below _____ ☒ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Site Contact: Mike Coram Lab Contact: D. Ketter Date: 6-5-18 Carrier: Fed Ex COC No: 1 of 1 COCs Sampler: D. Saliba For Lab Use Only: Walk-in Client: Lab Sampling: Job / SDG No.: Sample Specific Notes:	
Sample Identification TB-17322A-060518-DS GW-17322A-060518-DS-001 GW-17322A-060518-DS-002 GW-17322A-060518-DS-003 GW-17322A-060518-DS-004 GW-17322A-060518-DS-005 GW-17322A-060518-DS-006 GW-17322A-060518-DS-007 GW-17322A-060518-DS-008 GW-17322A-060518-DS-009 GW-17322A-060518-DS-010 GW-17322A-060518-DS-011 Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other		Sample Type G-Comp. G-Grab Sample Type Sample Time Sample Date Matrix # of Cont.		240-96696 Chain of Custody 	
TB-17322A-060518-DS GW-17322A-060518-DS-001 GW-17322A-060518-DS-002 GW-17322A-060518-DS-003 GW-17322A-060518-DS-004 GW-17322A-060518-DS-005 GW-17322A-060518-DS-006 GW-17322A-060518-DS-007 GW-17322A-060518-DS-008 GW-17322A-060518-DS-009 GW-17322A-060518-DS-010 GW-17322A-060518-DS-011		G G G G G G G G G G G		0950 1100 1210 1215 1410 1445 0910 1000 1035 1150 1345	
1 1 1 3 3 3 3 3 3 3 3 3		GW GW GW GW GW GW GW GW GW GW GW GW		1 1 1 3 3 3 3 3 3 3 3 3	
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months					
Special Instructions/QC Requirements & Comments: Custody Seal No.: Relinquished by: Derek Saliba Relinquished by: _____ Relinquished by: _____					
Cooler Temp. (°C): Obs'd: _____ Date/Time: 6-7-18 930 Company: TAL Date/Time: _____ Company: _____ Date/Time: _____ Company: _____					

TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : 96696

Client GHD Site Name _____ Cooler unpacked by: POF
 Cooler Received on 6-7-18 Opened on 6-7-18
 FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # TA Foam Box Client Cooler Box Other _____
 Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
 COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
 IR GUN# IR-8 (CF +0 °C) Observed Cooler Temp. 2.8 °C Corrected Cooler Temp. 2.8 °C
 IR GUN #36 (CF -0.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 IR GUN # 627 (CF -1.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
 -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
 -Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No
 If yes, Questions 12-16 have been checked at the originating laboratory.
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC740840
13. Were VOAs on the COC? Yes No
14. Were air bubbles >6 mm in any VOA vials? Yes Larger than this. Yes No NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 0 Yes No
16. Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not
checked for pH by
Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

RECEIVED 1 ^{ice} VIAL FOR SAMPLE 005 EMPTY

Samples processed by:
POF

18. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) TRIP BLANK were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
 Time preserved: _____ Preservative(s) added/Lot number(s): _____

Temperature readings: _____

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container pH</u>	<u>Preservative Added (mls)</u>	<u>Lot #</u>
GW-17322A-060518-DS-001	240-96696-A-2	Plastic 250ml - with Nitric Acid	<2	_____	_____
GW-17322A-060518-DS-002	240-96696-A-3	Plastic 250ml - with Nitric Acid	<2	_____	_____