

Kiera Thompson
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Division of Environmental Remediation
625 Broadway, 11th Floor
Albany, NY 12233-7014

**RE: NYSDEC BCP No. C360115 - Groundwater Monitoring
Report | 1-5 Holland Avenue, White Plains, New York**

FILE: 14206/75107

Dear Ms. Thompson:

In accordance with the *Site Management Plan, BCP No. C360115, 1-5 Holland Avenue, White Plains, New York, December 2014* (SMP), the following is the annual Groundwater Monitoring Report for the above referenced Brownfield site.

Date October 28, 2020

This report has been organized into the following sections:

- Section 1 - Background
- Section 2 - Field Activities
- Section 3 - Sample Results
- Section 4 - Groundwater Flow Monitoring
- Section 5 - Remedial Action Objectives Assessment

Ramboll
50 Main Street
Suite 1000
White Plains, NY 10606
USA

1. Background

<https://ramboll.com>

As detailed in the *Remedial Investigation Report, BCP No. C360115, 1-5 Holland Avenue, White Plains, New York, April 2014*, results of groundwater sampling indicated the presence of tetrachloroethylene (PCE) in on-site monitoring wells in the source area, in on-site monitoring wells at the downgradient/sidegradient property boundary, and in off-site downgradient monitoring wells, at concentrations above the NYS Class GA groundwater standard of 5 µg/L. The site cleanup goal for groundwater is, to the extent practicable, to meet NYS Class GA standards. The Class GA standards for the Site's Constituents of Concern (COC) are as follows:

- Tetrachloroethene – 5 µg/L
- cis-1,2-Dichloroethene – 5 µg/L
- Trichloroethene – 5 µg/L
- Vinyl chloride – 2 µg/L

As detailed in the *Interim Remedial Measure Construction Completion Report, BCP No. C360115, 1-5 Holland Avenue, White Plains, New York, October 2014* (IRM), groundwater treatment by In-situ Chemical Oxidation (ISCO) was selected

to meet this goal. Two ISCO groundwater treatment injection events were conducted as part of the IRM in June 2013 and September 2014.

As detailed in the most recently updated and NYSDEC approved SMP (November 2018), groundwater samples are to be collected annually. This report presents groundwater data for the sampling event conducted in May 2020, which is the sixth year the SMP has been implemented. In accordance with the NYSDEC Periodic Review Report (PRR) acceptance letter dated October 17, 2018, upgradient wells MW-6 and MW-6SB were decommissioned in December 2018.

The purpose of the groundwater monitoring is to evaluate concentrations of the Site's COC that exceed Class GA standards, primarily PCE and associated degradation products; to assess the extent of concentration rebound following ISCO treatment; and to monitor the continued attenuation of COC.

2. Field Activities

On April 28, 2020, Ramboll set passive diffusion bags (PDBs) in on-site (MW-1, -2, -2S, -2D, -4S, -4D, -5, -5SB, -5DB) and off-site (MW-7, -7SB, -8, -8SB, -9, -9SB) groundwater monitoring wells, as depicted on **Figure 1**. PDBs were retrieved on May 21, 2020. Sampling activities were conducted in accordance with the SMP Field Activities Plan. Groundwater sampling logs and a summary of water quality field parameters are presented in **Appendix A**. Groundwater samples were submitted under chain-of-custody to Merit Laboratories, Inc. (Merit), a NYSDOH ELAP certified laboratory, for analysis of volatile organic compounds (VOCs) by USEPA Test Method 8260.

3. Sample Results

Groundwater analytical results for this sampling event and historical sampling events are summarized on **Table 1**. Merit's laboratory analytical report and Ramboll's Data Usability Summary Report (DUSR) for this sampling event are presented in **Appendices B and C**, respectively. These data have been entered into the NYSDEC Environmental Information Management System. A graphical presentation of current and historical groundwater analytical data is presented in **Appendix D**. A summary of groundwater analytical results for this sampling event are as follows:

- On-site Groundwater Characterization – Source Area

A summary table of PCE concentrations in source area groundwater since the first ISCO event is presented below.

Well No.	6/10/13	11/14/13	1/14/14	7/17/14	10/10/14	5/8/15	10/09/15	5/04/16	10/25/16	5/18/17	10/30/17	5/15/18	4/26/19	5/21/20
MW-4S	1,040	10	21 (BD 21)	890	327	460	730	400	107	158	151	180	24	387
MW-4D	5,500	332	317	2,000 (BD 1,750)	54 (BD 63)	29 (BD 25)	2,490 (BD 840)	1,300 (BD 1,300)	990 (BD 860)	300 (BD 260)	221 (BD 189)	270 (BD 300)	116	82

Notes: ISCO injection events occurred June 11-14, 2013 and September 9-11, 2014 as noted by hatched areas.
Bold values exceed Class GA standards.
Units = ug/L, ppb, BD = Blind Duplicate

Compared to the prior sampling event, the PCE concentration in MW-4D is one order of magnitude lower and has decreased from 2,490 µg/L to 82 µg/L since 2015. Compared to the prior sampling event, concentrations of PCE in well MW-4S have increased an order of magnitude from 24 µg/L to 387 µg/L. PCE degradation compounds were not detected in source area wells.

- On-site Groundwater Characterization – Downgradient/Sidegradient Property Boundary

A summary table of PCE concentrations in groundwater along the downgradient/sidegradient property boundary since the first ISCO event is presented below.

Well No.	06/10/13	11/15/13	01/14/14	07/17/14	10/10/14	5/8/15	10/9/15	5/4/16	10/25/16	5/18/17	10/30/17	05/15/18	4/26/19	5/21/20
MW-1 (Sidegrad)	2	0.39	3	16	3	10	3	1	2	29	2	34	56	6
MW-2 (Downgrad)	27	6	19	94	158	33	64	55	15	44	83	123	40	199
MW-2SB (Downgrad)	0.78	0.71	1	0.52	0.48	0.34	0.24	0.36	0.22	<1.0	0.37	0.43	<1.0	4
MW-2DB (Downgrad)	3	0.42	3	4	4	3	3	3	2	2	4	4	6	4
MW-5 (Downgrad)	165	5	67	5	4	4	2	2	32	42	7	4	7	0.26 J
MW-5SB (Downgrad)	4	3	3	3	2	2	2	1	2	0.43 J	2	4	7	3
MW-5DB (Downgrad)	1	0.81	0.95	0.41	0.48	0.55	0.39	0.31	0.25	3	0.34	0.28	<1.0	0.21 J

Notes: ISCO injection events occurred June 11-14, 2013 and September 9-11, 2014 as noted by hatched areas.

Bold values exceed Class GA standards.

J = The concentration was detected at a value below the Reporting Limit (RL) and above the MDL.

Units = µg/L, ppb

The most recent round of groundwater data indicates that groundwater from two out of the seven property boundary wells exceeded the GA groundwater standard for PCE; however, it is noted that one of these wells had an exceedances of only 1 µg/L. Consistent with the prior round of groundwater sampling, no PCE degradation compounds were detected in these wells above the GA groundwater standard.

- Downgradient Off-site Groundwater Characterization

A summary table of PCE concentrations in off-site downgradient groundwater since the first ISCO event is presented below.

Well No.	06/10/13	07/17/14	10/10/14	5/7/15	10/9/15	5/4/16	10/25/16	5/18/-6/8/17	10/30/17	05/15/18	4/26/19	5/21/2020
MW-7	14	57	71	47	32	34	15	32	31	68	54	14
MW-7SB	6	7	3	1	0.97	0.86	0.59	0.27 J	<1.0	0.32	<1.0	<1.0
MW-8	1 (BD <0.67)	4	1	2	1	1	1	3	2	1	2	3
MW-8SB	265	292	3	280	359	240	190	229	271	360	177 (BD 168)	212
MW-9	0.18	<1.0	0.38	<1.0	0.25	<1.0	0.31	<1.0	0.31	<1.0	<1.0	<1.0
MW-9SB	0.3	0.34	0.26	0.21	<1.0	<1.0	<1.0	<1.0	<1.0	0.28	<1.0	<1.0

Notes: ISCO injection events occurred June 11-14, 2013 and September 9-11, 2014 as noted by hatched areas.

Bold values exceed Class GA standards.

J = The concentration was detected at a value below the Reporting Limit (RL) and above the MDL.

Units = µg/L, ppb, BD = Blind Duplicate

Consistent with the previous groundwater sampling events, groundwater from two out of the six downgradient off-site wells exceeded the GA standard for PCE. Only three PCE degradation compounds, cis-1,2-dichloroethene detected at 6 µg/L in MW-7SB; vinyl chloride detected at 8 µg/L in MW-8; and trichloroethylene detected at 10 µg/L in MW-8SB; were detected above the GA standards of 5 µg/L, 2 µg/L, and 5 µg/L, respectively.

4. Groundwater Flow Monitoring

Groundwater elevation measurements were collected from overburden, shallow bedrock, and deep bedrock monitoring wells on May 21, 2020, which were used to develop overburden and shallow bedrock groundwater elevation contour maps presented as **Figures 2** and **3**, respectively. A deep bedrock groundwater elevation contour map was not developed, because only two deep bedrock wells exist.

- Overburden – Groundwater level measurements in the overburden indicate a hydraulic gradient from east to west consistent with prior measurements collected during the Remedial Investigation, site topography, and the presence of the Bronx River to the west of the Site.
- Shallow Bedrock – Groundwater level measurements in the shallow bedrock wells also indicate a hydraulic gradient east to west. This hydraulic gradient is consistent with that observed in the overburden, the overall topography, and the presence of a regional topographic low in the vicinity of the Bronx River.

5. Remedial Action Objectives Assessment

As detailed in the *Final Engineering Report, NYSDEC Site Number: C360115, 1-5 Holland Avenue, White Plains, New York, December 2014*, the Remedial Action Objectives (RAOs) for groundwater are as follows:

- RAOs for Public Health Protection
 - Prevent ingestion of groundwater with COC concentrations exceeding drinking water standards.
 - Prevent contact with, or inhalation of, volatiles from contaminated groundwater.
- RAOs for Environmental Protection
 - Restore groundwater aquifer to pre-disposal/pre-release conditions, to the extent practicable.
 - Prevent the discharge of COCs to surface water.
 - Remove the source of groundwater or surface water COCs.

Based on the groundwater analytical results collected as part of this sampling event and the institutional and engineering controls currently in-place at the site, the remedy is effective for protection of human health and the environment. Institutional and engineering controls currently in-place include:

- Engineering Controls
 - composite cover system (Cap) to reduce potential contact with contaminated soils; and
 - sub-slab depressurization system to control the potential for vapor intrusion.
- Institutional Controls
 - implement, maintain and monitor Engineering Control systems;
 - prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and
 - limit the use and development of the Site to Commercial and Industrial uses only.

Should you have any questions or concerns regarding this matter, please feel free to contact me at 781-883-6432.

Yours sincerely

A handwritten signature in black ink that reads "Mark Randazzo".

Mark Randazzo, CHMM, CPG, CSP

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Appendices: Table 1 – Historical Summary of Groundwater Monitoring Data
Figure 1 – Groundwater Monitoring Well Location Map
Figure 2 – Overburden Groundwater Elevation Contour Map
Figure 3 – Shallow Bedrock Groundwater Elevation Contour Map
Appendix A – Groundwater Sampling Logs
Appendix B – Merit's Laboratory Analytical Report
Appendix C – Data Usability Summary Report
Appendix D – Graphical Presentation of PCE Groundwater Concentrations

cc: Kevin Carpenter, PE – NYSDEC
Stephanie Selmer – NYSDOH
Liesel Shoesmith – OHAD
Neal Frink, Esq. – The Frink Law Firm, LLC
Douglas Crawford, PE – Ramboll

TABLES

Table 1
Groundwater Quality VOC Summary
Groundwater Sampling Report
Brownfield Cleanup Program NO. C360115

Parameter	Units	Well ID:	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2DB	MW-2DB	MW-2DB	MW-2DB	
		Screen Interval (ft above msl):	181.4 - 191.4	181.4 - 191.4	181.4 - 191.4	181.4 - 191.4	181.4 - 191.4	181.4 - 191.4	181.4 - 191.4	181.4 - 191.4	181.4 - 191.4	126.3 - 136.3	126.3 - 136.3	126.3 - 136.3	126.3 - 136.3
		Date Sampled:	10/9/2015 (Post ISCO)	5/4/2016 (Post ISCO)	10/26/2016 (Post ISCO)	5/18/2017 (Post ISCO)	10/30/2017 (Post ISCO)	05/15/2018 (Post ISCO)	04/26/2019 (Post ISCO)	05/21/2020 (Post ISCO)	5/5/2011	10/20/2011	5/2/2012	6/10/2013	
		6 NYCRR Part 703/TOGS 1.1.1 Class GA Groundwater Standards	On-Site Locations												
Volatile Organic Compounds (VOCs)															
1,1,1-Trichloroethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<5	<0.420	<0.350	<0.330	<0.27	
1,1,2,2-Tetrachloroethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<5	<0.280	<0.310	<0.320	<0.27	
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<5	<0.320	<0.440	<0.420	<0.46	
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<5	<0.570	<0.360	<0.220	<0.34	
1,1-Dichloroethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<5	<0.440	<0.430	<0.260	<0.15	
1,1-Dichloroethene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<5	<0.410	<0.710	<0.410	<0.27	
1,2,3-Trichlorobenzene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<5	<0.550	<0.420	<0.210	<0.25	
1,2,4-Trichlorobenzene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<5	<0.340	<0.390	<0.200	<0.24	
1,2-Dibromo-3-chloropropane	ug/L	0.04	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.660	<0.00855	<0.00855	<0.0080	
1,2-Dibromoethane (EDB)	ug/L	0.0006	<1	<1	<1	<1	<1	<1	<1	<1	<0.400	<0.00855	<0.00855	<0.12	
1,2-Dichlorobenzene	ug/L	3	<1	<1	<1	<1	<1	<1	<1	<5	<0.340	<0.360	<0.230	<0.13	
1,2-Dichloroethane (EDC)	ug/L	0.6	<1	<1	<1	<1	<1	<1	<1	<5	<0.460	<0.420	<0.200	<0.17	
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<5	<0.460	<0.520	<0.250	<0.18	
1,3-Dichlorobenzene	ug/L	3	<1	<1	<1	<1	<1	<1	<1	<5	<0.410	<0.420	<0.230	<0.20	
1,4-Dichlorobenzene	ug/L	3	<1	<1	<1	<1	<1	<1	<1	<5	<0.430	<0.330	<0.230	<0.18	
1,4-Dioxane	ug/L	NC	<3	<1	<3	<3	<1	<1	<1	<1	<20.2 R	<22.5 R	<0.301	<0.97	
2-Butanone (MEK)	ug/L	50	<10	0.34 J	13	<10	<10	1.28 J	<10	<50	<0.510	<0.630	<0.550	3.4 J	
2-Hexanone	ug/L	50	<10	<10	<10	<10	<10	<10	<10	<50	<0.370	<0.260	<0.370	<0.19	
4-Methyl-2-pentanone (MIBK)	ug/L	NC	<10	<10	0.15 J	<10	<10	0.16 J	<10	<50	<0.410	<0.510	<0.350	<0.35	
Acetone	ug/L	50	<10	2.04 J	11	<10	2.11 J	4.67 J	2.94 J	4.4 J	<0.610	<0.870	<0.280	<4.0	
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<5	<0.250	<0.430	<0.250	<0.11	
Bromochloromethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<5	<0.560	<0.470	<0.300	<0.36	
Bromodichloromethane	ug/L	50	<1	<1	<1	<1	<1	<1	<1	<5	<0.350	<0.350	<0.260	<0.19	
Bromoform	ug/L	50	<1	<1	<1	<1	<1	<1	<1	<5	<0.520	<0.260	<0.460	<0.35	
Bromomethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<5	<0.680	<0.670	<0.250	<0.18	
Carbon disulfide	ug/L	NC	<1	<1	<1	<1	<1	<1	<1	<5	<0.330	<0.500	<0.300	<0.13	
Carbon tetrachloride	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<5	<0.290	<0.400	<0.360	<0.19	
Chlorobenzene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<5	<0.420	<0.480	<0.220	<0.16	
Chloroethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<5	<0.480	<0.780	<0.360	<0.21	
Chloroform	ug/L	7	<1	<1	<1	<1	<1	0.32 J	<1	<5	2.41	<0.340	<0.220	0.26 J	
Chloromethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<5	<0.430	<0.350	<0.280	<0.20	
cis-1,2-Dichloroethene	ug/L	5	<1	<1	0.15 J	<1	<1	<1	<1	<5	<0.560	<0.380	<0.300	<0.21	
cis-1,3-Dichloropropene	ug/L	0.4	<1	<1	<1	<1	<1	<1	<1	<5	<0.360	<0.360	<0.250	<0.17	
Cyclohexane	ug/L	NC	<1	<1	<1	<1	<1	<1	<1	<5	<0.230	<0.460	<0.380	<0.32	
Dibromochloromethane	ug/L	50	<1	<1	<1	<1	<1	<1	<1	<5	<0.430	<0.360	<0.240	<0.20	
Dichlorodifluoromethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<5	<0.420	<0.420	<0.290	<0.57	
Ethylbenzene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<5	<0.340	<0.340	<0.220	<0.10	
Isopropylbenzene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<5	<0.300	<0.390	<0.210	<0.12	
Methyl acetate	ug/L	NC	<1	<1	<1	<1	<1	<1	<1	<5	<0.600	<0.350	<0.220	<0.20	
Methyl tert-butyl ether (MTBE)	ug/L	NC	<1	<1	<1	<1	<1	<1	<1	<5	<0.450	<0.380	<0.240	<0.13	
Methylcyclohexane	ug/L	NC	<1	<1	<1	<1	<1	<1	<1	<5	<0.290	<0.460	<0.360	<0.16	
Methylene chloride	ug/L	5	<1	<1	<1	<1	<1	<1	0.48 J	<5	<1.98	<1.98	<1.98	<0.13	
Styrene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<5	<0.380	<0.330	<0.250	<0.25	
Tetrachloroethene	ug/L	5	64	55	15	44	83	123	40	199	4.83	4.96	4.41	3	
Toluene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<5	1.19	<0.390	<0.270	<0.17	
trans-1,2-Dichloroethene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<5	<0.500	<0.550	<0.350	<0.58	
trans-1,3-Dichloropropene	ug/L	0.4	<1	<1	<1	<1	<1	<1	<1	<5	<0.450	<0.320	<0.220	<0.14	
Trichloroethene	ug/L	5	<1	<1	0.15 J	<1	<1	<1	<1	<5	<0.440	<0.550	<0.270	<0.20	
Trichlorofluoromethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<5	<0.220	<0.660	<0.450	<0.29	
Vinyl Chloride	ug/L	2	<1	<1	<1	<1	<1	<1	<1	<5	<0.300	<0.460	<0.290	<0.28	
Xylenes (Total)	ug/L	5	<3	<3	<3	<3	<3	<3	<3	<20	<0.660	<0.630	<0.690	<0.24	
Total VOCs	ug/L	NA	64.0	57.4 J	39.5	44.0	85.1 J	129.4 J	43.4 J	203.4 J	8.4	5.0	4.4	6.7 J	

Notes:

6 NYCRR Part 703 and TOGS 1.1.1 = Division of Water Technical and Operational Guidance Series:
 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations
ft above msl = feet above mean sea level
BOLD = Exceeds TOGS 1.1.1 Class GA Groundwater Standards/Criteria
 * = Analyzed for but Not Detected at the Method Detection Limit (MDL)
J = The concentration was detected at a value below the Reporting Limit (RL) and above the MDL.

R = The result was rejected during data validation.
D = Diluted sample result
units = ug/L or parts per billion
NA = Not Available
NC = No Criteria

Table 1
Groundwater Quality VOC Summary
Groundwater Sampling Report
Brownfield Cleanup Program NO. C360115

Parameter	Units	Well ID:	MW-2DB	MW-2DB	MW-2DB	MW-2DB	MW-2DB	MW-2DB	MW-2DB	MW-2DB	MW-2DB	MW-2DB	MW-2DB
		Screen Interval (ft above msl):	126.3 - 136.3	126.3 - 136.3	126.3 - 136.3	126.3 - 136.3	126.3 - 136.3	126.3 - 136.3	126.3 - 136.3	126.3 - 136.3	126.3 - 136.3	126.3 - 136.3	126.3 - 136.3
		Date Sampled:	11/14/2013 (Post ISCO)	1/14/2014 (Post ISCO)	7/17/2014 (Post ISCO)	10/10/2014 (Post ISCO)	5/8/2015 (Post ISCO)	10/9/2015 (Post ISCO)	5/4/2016 (Post ISCO)	10/26/2016 (Post ISCO)	5/18/2017 (Post ISCO)	10/30/2017 (Post ISCO)	05/15/2018 (Post ISCO)
		6 NYCRR Part 703/TOGS 1.1.1 Class GA Groundwater Standards	On-Site Locations										
Volatile Organic Compounds (VOCs)													
1,1,1-Trichloroethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05
1,2-Dibromoethane (EDB)	ug/L	0.0006	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane (EDC)	ug/L	0.6	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dioxane	ug/L	NC	<5	<5	<5	<5	<5	<3	<1	<3	<1	<1	<1
2-Butanone (MEK)	ug/L	50	<10	1.15 J	0.54 J	<10	<10	<10	<10	12	<10	<10	1.80 J
2-Hexanone	ug/L	50	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-Methyl-2-pentanone (MIBK)	ug/L	NC	<10	<10	<10	<10	<10	<10	<10	0.15 J	<10	<10	0.29 J
Acetone	ug/L	50	1.23 J	5.22 J	2.07 J	<10	1.30 J	<10	<10	13	<10	2.21 J	2.49 J
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	ug/L	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	7	<1	<1	0.30 J	0.19 J	<1	0.24 J	<1	0.16 J	<1	<1	<1
Chloromethane	ug/L	5	<1	<1	<1	0.24 J	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	0.4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cyclohexane	ug/L	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	ug/L	50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Isopropylbenzene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl acetate	ug/L	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl tert-butyl ether (MTBE)	ug/L	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methylcyclohexane	ug/L	NC	<1	<1	<1	<1	<1	<1	<1	0.22 J	<1	<1	<1
Methylene chloride	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.45 J
Styrene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	5	0.42 J	3	4	4	3	3	3	2	2	4	4
Toluene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	0.4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl Chloride	ug/L	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes (Total)	ug/L	5	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Total VOCs	ug/L	NA	1.7 J	9.4 J	6.9 J	4.4 J	4.3 J	3.2 J	3.0	27.3	2.2 J	6.2 J	8.6 J

Notes:

6 NYCRR Part 703 and TOGS 1.1.1 = Division of Water Technical and Operational Guidance Series:
Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations
ft above msl = feet above mean sea level
BOLD = Exceeds TOGS 1.1.1 Class GA Groundwater Standards/Criteria
* = Analyzed for but Not Detected at the Method Detection Limit (MDL)
J = The concentration was detected at a value below the Reporting Limit (RL) and above the MDL.

R = The result was rejected during data validation.
D = Diluted sample result
units = ug/L or parts per billion
NA = Not Available
NC = No Criteria

Table 1
Groundwater Quality VOC Summary
Groundwater Sampling Report
Brownfield Cleanup Program NO. C360115

Parameter		Well ID:	MW-2DB	MW-2SB	MW-2SB	MW-2SB	(DUP) MW-2SB	MW-2SB	MW-2SB	MW-2SB	MW-2SB	MW-2SB	MW-2SB	MW-2SB	
		Screen Interval (ft above msf):	126.3 - 136.3	148.9 - 158.9	148.9 - 158.9	148.9 - 158.9	148.9 - 158.9	148.9 - 158.9	148.9 - 158.9	148.9 - 158.9	148.9 - 158.9	148.9 - 158.9	148.9 - 158.9	148.9 - 158.9	148.9 - 158.9
		Date Sampled:	5/21/2020 (Post ISCO)	5/5/2011	10/21/2011	5/2/2012	5/2/2012	6/10/2013	11/14/2013 (Post ISCO)	1/14/2014 (Post ISCO)	7/17/2014 (Post ISCO)	10/10/2014 (Post ISCO)	5/8/2015 (Post ISCO)	10/9/2015 (Post ISCO)	
		6 NYCRR Part 703/TOGS 1.1.1 Class GA Groundwater Standards	On-Site Locations												
Volatle Organic Compounds (VOCs)	Units														
1,1,1-Trichloroethane	ug/L	5	<1	<0.420	<0.350	<0.330	<0.330	<0.27	<1	<1	<1	<1	<1	<1	
1,1,2,2-Tetrachloroethane	ug/L	5	<1	<0.280	<0.310	<0.320	<0.320	<0.27	<1	<1	<1	<1	<1	<1	
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	5	<1	<0.320	<0.440	<0.420	<0.420	<0.46	<1	<1	<1	<1	<1	<1	
1,1,2-Trichloroethane	ug/L	1	<1	<0.570	<0.360	<0.220	<0.220	<0.34	<1	<1	<1	<1	<1	<1	
1,1-Dichloroethane	ug/L	5	<1	<0.440	<0.430	<0.260	<0.260	<0.15	<1	<1	<1	<1	<1	<1	
1,1-Dichloroethene	ug/L	5	<1	<0.410	<0.710	<0.410	<0.410	<0.27	<1	<1	<1	<1	<1	<1	
1,2,3-Trichlorobenzene	ug/L	5	<1	<0.550	<0.420	<0.210	<0.210	<0.25	<1	<1	<1	<1	<1	<1	
1,2,4-Trichlorobenzene	ug/L	5	<1	<0.340	<0.390	<0.200	<0.200	<0.24	<1	<1	<1	<1	<1	<1	
1,2-Dibromo-3-chloropropane	ug/L	0.04	<0.05	<0.660	<0.00855	<0.00855	<0.00855	<0.0080	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
1,2-Dibromoethane (EDB)	ug/L	0.0006	<1	<0.400	<0.00855	<0.00855	<0.00855	<0.12	<1	<1	<1	<1	<1	<1	
1,2-Dichlorobenzene	ug/L	3	<1	<0.340	<0.360	<0.230	<0.230	<0.13	<1	<1	<1	<1	<1	<1	
1,2-Dichloroethane (EDC)	ug/L	0.6	<1	<0.460	<0.420	<0.200	<0.200	<0.17	<1	<1	<1	<1	<1	<1	
1,2-Dichloropropane	ug/L	1	<1	<0.460	<0.520	<0.250	<0.250	<0.18	<1	<1	<1	<1	<1	<1	
1,3-Dichlorobenzene	ug/L	3	<1	<0.410	<0.420	<0.230	<0.230	<0.20	<1	<1	<1	<1	<1	<1	
1,4-Dichlorobenzene	ug/L	3	<1	<0.430	<0.330	<0.230	<0.230	<0.18	<1	<1	<1	<1	<1	<1	
1,4-Dioxane	ug/L	NC	<1	<20.2 R	<22.5 R	<0.301	<0.301	<0.97	<5	<5	<5	<5	<5	<3	
2-Butanone (MEK)	ug/L	50	<10	<0.510	<0.630	<0.550	<0.550	4.7 J	<10	0.62 J	0.64 J	<10	<10	<10	
2-Hexanone	ug/L	50	<10	<0.370	<0.260	<0.370	<0.370	<0.19	<10	<10	<10	<10	<10	<10	
4-Methyl-2-pentanone (MIBK)	ug/L	NC	<10	<0.410	<0.510	<0.350	<0.350	<0.35	<10	<10	<10	<10	<10	<10	
Acetone	ug/L	50	3.13 J	<0.610	<0.870	<0.280	<0.280	5.0 J	1.38 J	3.13 J	3.81 J	<10	2.26 J	<10	
Benzene	ug/L	1	<1	<0.510	<0.430	<0.250	<0.250	<0.11	<1	<1	<1	<1	<1	<1	
Bromochloromethane	ug/L	5	<1	<0.560	<0.470	<0.300	<0.300	<0.36	<1	<1	<1	<1	<1	<1	
Bromodichloromethane	ug/L	50	<1	<0.440	<0.350	<0.260	<0.260	<0.19	<1	<1	<1	<1	<1	<1	
Bromoform	ug/L	50	<1	<0.520	<0.260	<0.460	<0.460	<0.35	<1	<1	<1	<1	<1	<1	
Bromomethane	ug/L	5	<1	<0.680	<0.670	<0.250	<0.250	<0.18	<1	<1	<1	<1	<1	<1	
Carbon disulfide	ug/L	NC	<1	<0.330	<0.500	<0.300	<0.300	<0.13	<1	<1	<1	<1	<1	<1	
Carbon tetrachloride	ug/L	5	<1	<0.290	<0.400	<0.360	<0.360	<0.19	<1	<1	<1	<1	<1	<1	
Chlorobenzene	ug/L	5	<1	<0.420	<0.480	<0.220	<0.220	<0.16	<1	<1	<1	<1	<1	<1	
Chloroethane	ug/L	5	<1	<0.480	<0.780	<0.360	<0.360	<0.21	<1	<1	<1	<1	<1	<1	
Chloroform	ug/L	7	<1	13	2.69	2.5	2.49	1	0.96 J	0.84 J	0.60 J	0.63 J	0.55 J	0.36 J	
Chloromethane	ug/L	5	<1	<0.430	<0.350	<0.280	<0.280	<0.20	<1	<1	<1	<1	<1	<1	
cis-1,2-Dichloroethene	ug/L	5	<1	<0.560	<0.380	<0.300	<0.300	<0.21	<1	<1	<1	<1	<1	<1	
cis-1,3-Dichloropropene	ug/L	0.4	<1	<0.360	<0.360	<0.250	<0.250	<0.17	<1	<1	<1	<1	<1	<1	
Cyclohexane	ug/L	NC	<1	<0.230	<0.460	<0.380	<0.380	<0.32	<1	<1	<1	<1	<1	<1	
Dibromochloromethane	ug/L	50	<1	<0.430	<0.360	<0.240	<0.240	<0.20	<1	<1	<1	<1	<1	<1	
Dichlorodifluoromethane	ug/L	5	<1	<0.420	<0.420	<0.290	<0.290	<0.57	<1	<1	<1	<1	<1	<1	
Ethylbenzene	ug/L	5	<1	<0.340	<0.340	<0.220	<0.220	<0.10	<1	<1	<1	<1	<1	<1	
Isopropylbenzene	ug/L	5	<1	<0.300	<0.390	<0.210	<0.210	<0.12	<1	<1	<1	<1	<1	<1	
Methyl acetate	ug/L	NC	<1	<0.600	<0.350	<0.220	<0.220	<0.20	<1	<1	<1	<1	<1	<1	
Methyl tert-butyl ether (MTBE)	ug/L	NC	<1	<0.450	<0.380	<0.240	<0.240	<0.25	<1	<1	<1	<1	<1	<1	
Methylcyclohexane	ug/L	NC	<1	<0.290	<0.460	<0.360	<0.360	<0.13	<1	<1	<1	<1	<1	<1	
Methylene chloride	ug/L	5	<1	<1.98	<1.98	<1.98	<1.98	<0.16	<1	<1	<1	<1	<1	<1	
Styrene	ug/L	5	<1	<0.380	<0.330	<0.250	<0.250	<0.13	<1	<1	<1	<1	<1	<1	
Tetrachloroethene	ug/L	5	4	0.988 J	0.670 J	<0.330	<0.330	0.78 J	0.71 J	1	0.52 J	0.48 J	0.34 J	0.24 J	
Toluene	ug/L	5	<1	<0.230	<0.390	<0.270	<0.270	<0.17	<1	<1	<1	<1	<1	<1	
trans-1,2-Dichloroethene	ug/L	5	<1	<0.500	<0.550	<0.350	<0.350	<0.14	<1	<1	<1	<1	<1	<1	
trans-1,3-Dichloropropene	ug/L	0.4	<1	<0.450	<0.320	<0.220	<0.220	<0.20	<1	<1	<1	<1	<1	<1	
Trichloroethene	ug/L	5	<1	<0.440	<0.550	<0.270	<0.270	<0.29	<1	<1	<1	<1	<1	<1	
Trichlorofluoromethane	ug/L	5	<1	<0.220	<0.660	<0.450	<0.450	<0.28	<1	<1	<1	<1	<1	<1	
Vinyl Chloride	ug/L	2	<1	<0.300	<0.460	<0.290	<0.290	<0.24	<1	<1	<1	<1	<1	<1	
Xylenes (Total)	ug/L	5	<3	<0.660	<0.630	<0.690	<0.690	<0.58	<3	<3	<3	<3	<3	<3	
Total VOCs	ug/L	NA	7.1 J	14.0 J	3.2 J	2.5	2.5	11.5 J	3.1 J	5.6 J	5.6 J	1.1 J	3.2 J	0.6 J	

Notes:

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D = Diluted sample result
units = ug/L or parts per billion
NA = Not Available
NC = No Criteria

Table 1
Groundwater Quality VOC Summary
Groundwater Sampling Report
Brownfield Cleanup Program NO. C360115

Parameter	Units	Well ID:	MW-2SB	MW-2SB	MW-2SB	MW-2SB	MW-2SB	MW-2SB	MW-2SB	MW-2SB	DUP (MW-2SB)	MW-4D	MW-4D	MW-4D	MW-4D
		Screen Interval (ft above msl):	148.9 - 158.9	148.9 - 158.9	148.9 - 158.9	148.9 - 158.9	148.9 - 158.9	148.9 - 158.9	148.9 - 158.9	148.9 - 158.9	148.9 - 158.9	158 - 168	158 - 168	158 - 168	158 - 168
		Date Sampled:	5/4/2016 (Post ISCO)	10/26/2016 (Post ISCO)	5/18/2017 (Post ISCO)	10/30/2017 (Post ISCO)	05/15/2018 (Post ISCO)	04/26/2019 (Post ISCO)	5/21/2020 (Post ISCO)	5/21/2020 (Post ISCO)	10/19/2011	5/1/2012	6/10/2013	11/14/2013 (Post ISCO)	
		6 NYCRR Part 703/TOGS 1.1.1 Class GA Groundwater Standards	On-Site Locations												
Volatile Organic Compounds (VOCs)															
1,1,1-Trichloroethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<17.5	<16.5	<54	<1	
1,1,2,2-Tetrachloroethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<15.5	<16.0	<53	<1	
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<22.0	<21.0	<93	<1	
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1	<18.0	<11.0	<69	<1	
1,1-Dichloroethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<21.5	<13.0	<29	<1	
1,1-Dichloroethene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<35.5	<20.5	<54	<1	
1,2,3-Trichlorobenzene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<21.0	<10.5	<49	<1	
1,2,4-Trichlorobenzene	ug/L	5	<1	<1	<1	<1	<1	<1	0.20 J	<1	<19.5	<10.0	<49	<1	
1,2-Dibromo-3-chloropropane	ug/L	0.04	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.00855	<0.00855	<0.0080	<0.05	
1,2-Dibromoethane (EDB)	ug/L	0.0006	<1	<1	<1	<1	<1	<1	<1	<1	<0.00855	<0.00855	<24	<1	
1,2-Dichlorobenzene	ug/L	3	<1	<1	<1	<1	<1	<1	<1	<1	<18.0	<11.5	<27	<1	
1,2-Dichloroethane (EDC)	ug/L	0.6	<1	<1	<1	<1	<1	<1	<1	<1	<21.0	<10.0	<34	<1	
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1	<26.0	<12.5	<36	<1	
1,3-Dichlorobenzene	ug/L	3	<1	<1	<1	<1	<1	<1	<1	<1	<21.0	<11.5	<40	<1	
1,4-Dichlorobenzene	ug/L	3	<1	<1	<1	<1	<1	<1	<1	<1	<16.5	<11.5	<36	<1	
1,4-Dioxane	ug/L	NC	<1	<3	<3	<1	<1	<1	<1	<1	<1130 R	<0.301	<0.97	<5	
2-Butanone (MEK)	ug/L	50	<10	12	<10	<10	2.76 J	0.91 J	<10	<10	<31.5	<27.5	<650	<10	
2-Hexanone	ug/L	50	<10	<10	<10	<10	<10	<10	<10	<10	<13.0	<18.5	<37	<10	
4-Methyl-2-pentanone (MIBK)	ug/L	NC	<10	0.17 J	<10	<10	0.35 J	<10	<10	<10	<25.5	<17.5	<70	<10	
Acetone	ug/L	50	2.07 J	13	53 J	4.96 J	7.60 J	8.17 J	5.70 J	5.46 J	<43.5	<14.0	<800	5.06 J	
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1	<21.5	<12.5	<22	<1	
Bromochloromethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<23.5	<15.0	<72	<1	
Bromodichloromethane	ug/L	50	<1	<1	<1	<1	<1	<1	<1	<1	<17.5	<13.0	<38	<1	
Bromoform	ug/L	50	<1	<1	<1	<1	<1	<1	<1	<1	<13.0	<23.0	<70	<1	
Bromomethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<33.5	<12.5	<37	<1	
Carbon disulfide	ug/L	NC	<1	<1	<1	<1	<1	<1	<1	<1	<25.0	<15.0	<25	<1	
Carbon tetrachloride	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<20.0	<18.0	<38	<1	
Chlorobenzene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<24.0	<11.0	<31	<1	
Chloroethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<39.0	<18.0	<43	<1	
Chloroform	ug/L	7	0.36 J	0.32 J	0.25 J	0.32 J	0.23 J	<1	0.22 J	<1	<17.0	<11.0	<30	<1	
Chloromethane	ug/L	5	<1	0.15 J	<1	<1	<1	<1	<1	<1	<17.5	<14.0	<39	<1	
cis-1,2-Dichloroethene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<19.0	<15.0	<42	<1	
cis-1,3-Dichloropropene	ug/L	0.4	<1	<1	<1	<1	<1	<1	<1	<1	<18.0	<12.5	<33	<1	
Cyclohexane	ug/L	NC	<1	<1	<1	<1	<1	<1	<1	<1	<23.0	<19.0	<65	<1	
Dibromochloromethane	ug/L	50	<1	<1	<1	<1	<1	<1	<1	<1	<18.0	<12.0	<40	<1	
Dichlorodifluoromethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<21.0	<14.5	<110	<1	
Ethylbenzene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<17.0	<11.0	<20	<1	
Isopropylbenzene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<19.5	<10.5	<23	<1	
Methyl acetate	ug/L	NC	<1	<1	<1	<1	<1	<1	<1	<1	<17.5	<11.0	<40	<1	
Methyl tert-butyl ether (MTBE)	ug/L	NC	<1	<1	<1	<1	<1	<1	<1	<1	<19.0	<12.0	<50	<1	
Methylcyclohexane	ug/L	NC	0.24 J	<1	<1	<1	<1	<1	<1	<1	<23.0	<18.0	<26	<1	
Methylene chloride	ug/L	5	<1	<1	<1	<1	<1	0.66 J	<1	<1	<99.0	<99.0	<32	<1	
Styrene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<16.5	<12.5	<25	<1	
Tetrachloroethene	ug/L	5	0.36 J	0.22 J	<1	0.37 J	0.43 J	0.53 J	0.26 J	<1	6070	6140	5500	332	
Toluene	ug/L	5	<1	0.13 J	<1	<1	<1	<1	<1	<1	<19.5	<13.5	<33	<1	
trans-1,2-Dichloroethene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<27.5	<17.5	<29	<1	
trans-1,3-Dichloropropene	ug/L	0.4	<1	<1	<1	<1	<1	<1	<1	<1	<16.0	<11.0	<40	<1	
Trichloroethene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<27.5	<13.5	<58	0.28 J	
Trichlorofluoromethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	<1	<33.0	<22.5	<57	<1	
Vinyl Chloride	ug/L	2	<1	<1	<1	<1	<1	<1	<1	<1	<23.0	<14.5	<48	<1	
Xylenes (Total)	ug/L	5	<3	<3	<3	<3	<3	<3	<3	<3	<31.5	<34.5	<120	<3	
Total VOCs	ug/L	NA	3.0 J	26.0	53.3 J	5.7 J	11.4 J	10.3 J	6.4 J	5.5 J	6070.0	6140.0	5500.0	337.3 J	

Notes:

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BOLD = Exceeds TOGS 1.1.1 Class GA Groundwater Standards/Criteria
* = Analyzed for but Not Detected at the Method Detection Limit (MDL)
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R = The result was rejected during data validation.
D = Diluted sample result
units = ug/L or parts per billion
NA = Not Available
NC = No Criteria

Table 1
Groundwater Quality VOC Summary
Groundwater Sampling Report
Brownfield Cleanup Program NO. C360115

Parameter	Units	Well ID:	MW-4D	MW-4D	DUP (MW-4D)	MW-4D	DUP (MW-4D)	MW-4D	DUP (MW-4D)	MW-4D	DUP (MW-4D)	MW-4D	DUP (MW-4D)	MW-4D
		Screen Interval (ft above msl):	158 - 168	158 - 168	158 - 168	158 - 168	158 - 168	158 - 168	158 - 168	158 - 168	158 - 168	158 - 168	158 - 168	158 - 168
		Date Sampled:	1/14/2014 (Post ISCO)	7/17/2014 (Post ISCO)	7/17/2014 (Post ISCO)	10/10/2014 (Post ISCO)	10/10/2014 (Post ISCO)	5/8/2015 (Post ISCO)	5/8/2015 (Post ISCO)	10/9/2015 (Post ISCO)	10/9/2015 (Post ISCO)	5/4/2016 (Post ISCO)	5/4/2016 (Post ISCO)	10/26/2016 (Post ISCO)
		6 NYCRR Part 703/TOGS 1.1.1 Class GA Groundwater Standards	On-Site Locations											
Volatile Organic Compounds (VOCs)														
1,1,1-Trichloroethane	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
1,1,2,2-Tetrachloroethane	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
1,1,2-Trichloroethane	ug/L	1	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
1,1-Dichloroethane	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
1,1-Dichloroethene	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
1,2,3-Trichlorobenzene	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
1,2,4-Trichlorobenzene	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
1,2-Dibromo-3-chloropropane	ug/L	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05
1,2-Dibromoethane (EDB)	ug/L	0.0006	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
1,2-Dichlorobenzene	ug/L	3	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
1,2-Dichloroethane (EDC)	ug/L	0.6	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
1,2-Dichloropropane	ug/L	1	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
1,3-Dichlorobenzene	ug/L	3	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
1,4-Dichlorobenzene	ug/L	3	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
1,4-Dioxane	ug/L	NC	<5	<5	<5	<5	<5	<5	<5	<3	<3	<1	<1	<3
2-Butanone (MEK)	ug/L	50	0.78 J	<200	<200	<10	<10	<10	<10	20 J	2.9 J	<1000	<1000	<500
2-Hexanone	ug/L	50	<10	<200	<200	<10	<10	<10	<10	<500	<100	<1000	<1000	<500
4-Methyl-2-pentanone (MIBK)	ug/L	NC	<10	<200	<200	<10	<10	<10	<10	<500	<100	<1000	<1000	<500
Acetone	ug/L	50	4.61 J	12 J	<200	<10	<10	1.97 J	2.02 J	<500	<100	<1000	<1000	<500
Benzene	ug/L	1	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Bromochloromethane	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Bromodichloromethane	ug/L	50	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Bromoform	ug/L	50	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Bromomethane	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Carbon disulfide	ug/L	NC	<1	<20	<20	0.35 J	0.19 J	<1	0.28 J	<50	<10	<100	<100	<50
Carbon tetrachloride	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Chlorobenzene	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Chloroethane	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Chloroform	ug/L	7	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Chloromethane	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
cis-1,2-Dichloroethene	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
cis-1,3-Dichloropropene	ug/L	0.4	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Cyclohexane	ug/L	NC	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Dibromochloromethane	ug/L	50	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Dichlorodifluoromethane	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Ethylbenzene	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Isopropylbenzene	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Methyl acetate	ug/L	NC	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Methyl tert-butyl ether (MTBE)	ug/L	NC	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Methylcyclohexane	ug/L	NC	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Methylene chloride	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Styrene	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Tetrachloroethene	ug/L	5	317	2000	1750	54	63	29	25	2490	840	1300	1300	990
Toluene	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
trans-1,2-Dichloroethene	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
trans-1,3-Dichloropropene	ug/L	0.4	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Trichloroethene	ug/L	5	0.30 J	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Trichlorofluoromethane	ug/L	5	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Vinyl Chloride	ug/L	2	<1	<20	<20	<1	<1	<1	<1	<50	<10	<100	<100	<50
Xylenes (Total)	ug/L	5	<3	<60	<60	<3	<3	<3	<3	<200	<30	<300	<300	<200
Total VOCs	ug/L	NA	322.7 J	2012.0 J	1750.0	54.4 J	63.2 J	31.0 J	27.3 J	2510.0 J	842.9 J	1300.0	1300.0	990.0

Notes:

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D = Diluted sample result
units = ug/L or parts per billion
NA = Not Available
NC = No Criteria

Table 1
Groundwater Quality VOC Summary
Groundwater Sampling Report
Brownfield Cleanup Program NO. C360115

Parameter	Units	Well ID:	DUP (MW-4D)	MW-4D	(DUP) MW-4D	MW-4D	(DUP) MW-4D	MW-4D	(DUP) MW-4D	MW-4D	MW-4D	MW-4S	MW-4S	MW-4S	
		Screen Interval (ft above msl):	158 - 168	158 - 168	158 - 168	158 - 168	158 - 168	158 - 168	158 - 168	158 - 168	158 - 168	158 - 168	178.4 - 188.5	178.4 - 188.5	178.4 - 188.5
		Date Sampled:	10/26/2016 (Post ISCO)	5/18/2017 (Post ISCO)	5/18/2017 (Post ISCO)	10/30/2017 (Post ISCO)	10/30/2017 (Post ISCO)	05/15/2018 (Post ISCO)	05/15/2018 (Post ISCO)	04/26/2019 (Post ISCO)	5/21/2020 (Post ISCO)	10/19/2011	5/1/2012	6/10/2013	
		6 NYCRR Part 703/TOGS 1.1.1 Class GA Groundwater Standards	On-Site Locations												
Volatile Organic Compounds (VOCs)															
1,1,1-Trichloroethane	ug/L	5	<50	<50	<50	<5	<1	<10	<10	<1	<1	<3.50	<3.30	<14	
1,1,2,2-Tetrachloroethane	ug/L	5	<50	<50	<50	<5	<1	<10	<10	<1	<1	<3.10	<3.20	<13	
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	5	<50	<50	<50	<5	<1	<10	<10	<1	<1	<4.40	<4.20	<23	
1,1,2-Trichloroethane	ug/L	1	<50	<50	<50	<5	<1	<10	<10	<1	<1	<3.60	<2.20	<17	
1,1-Dichloroethane	ug/L	5	<50	<50	<50	<5	<1	<10	<10	<1	<1	<4.30	<2.60	7.3	
1,1-Dichloroethene	ug/L	5	<50	<50	<50	<5	<1	<10	<10	<1	<1	<7.10	<4.10	<13	
1,2,3-Trichlorobenzene	ug/L	5	<50	<50	<50	<5	<1	<10	<10	<1	<1	<4.20	<2.10	<12	
1,2,4-Trichlorobenzene	ug/L	5	<50	<50	<50	<5	<1	<10	<10	<1	<1	<3.90	<2.00	<12	
1,2-Dibromo-3-chloropropane	ug/L	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.00855	<0.00855	<0.0080	
1,2-Dibromoethane (EDB)	ug/L	0.0006	<50	<50	<50	<5	<1	<10	<10	<1	<1	<0.00855	<0.00855	<6.1	
1,2-Dichlorobenzene	ug/L	3	<50	<50	<50	<5	<1	<10	<10	<1	<1	<3.60	<2.30	<6.7	
1,2-Dichloroethane (EDC)	ug/L	0.6	<50	<50	<50	<5	<1	<10	<10	<1	<1	<4.20	<2.00	<8.6	
1,2-Dichloropropane	ug/L	1	<50	<50	<50	<5	<1	<10	<10	<1	<1	<5.20	<2.50	<9.1	
1,3-Dichlorobenzene	ug/L	3	<50	<50	<50	<5	<1	<10	<10	<1	<1	<4.20	<2.30	<10	
1,4-Dichlorobenzene	ug/L	3	<50	<50	<50	<5	0.31 J	<10	<10	<1	<1	<3.30	<2.30	<9.0	
1,4-Dioxane	ug/L	NC	<3	<3	<3	<1	<1	<1	<1	<1	<1	<225 R	<0.301	<0.97	
2-Butanone (MEK)	ug/L	50	<500	<500	<500	1.5 J	<10	<100	<100	<10	<10	<6.30	<5.50	<160	
2-Hexanone	ug/L	50	<500	<500	<500	<50	<10	<100	<100	<10	<10	<2.60	<3.70	<9.4	
4-Methyl-2-pentanone (MIBK)	ug/L	NC	<500	<500	<500	<50	<10	<100	<100	<10	<10	<5.10	<3.50	<18	
Acetone	ug/L	50	<500	<500	<500	4.4 J	3.81 J	28.3 J	30.2 J	3.35 J	3.09 J	<8.70	<2.80	<200	
Benzene	ug/L	1	<50	<50	<50	<5	<1	<10	<10	<1	<1	<4.30	<2.50	<5.6	
Bromochloromethane	ug/L	5	<50	<50	<50	<5	<1	<10	<10	<1	<1	<4.70	<3.00	<18	
Bromodichloromethane	ug/L	50	<50	<50	<50	<5	<1	<10	<10	<1	<1	<3.50	<2.60	<9.6	
Bromoform	ug/L	50	<50	<50	<50	<5	<1	<10	<10	<1	<1	<2.60	<4.60	<18	
Bromomethane	ug/L	5	<50	<50	<50	<5	<1	<10	<10	<1	<1	<5.10	<2.50	<9.2	
Carbon disulfide	ug/L	NC	<50	<50	<50	<5	<1	<10	<10	<1	<1	<6.70	<3.00	<6.3	
Carbon tetrachloride	ug/L	5	<50	<50	<50	<5	<1	<10	<10	<1	<1	<5.00	<3.60	<9.4	
Chlorobenzene	ug/L	5	<50	<50	<50	<5	<1	<10	<10	<1	<1	<4.00	<2.20	<7.8	
Chloroethane	ug/L	5	<50	<50	<50	<5	<1	<10	<10	<1	<1	<4.80	<3.60	<11	
Chloroform	ug/L	7	<50	<50	<50	<5	<1	<10	<10	<1	<1	<3.40	<2.20	<7.5	
Chloromethane	ug/L	5	<50	<50	<50	<5	<1	<10	<10	0.40 J	<1	<3.50	<2.80	<9.8	
cis-1,2-Dichloroethene	ug/L	5	<50	<50	<50	<5	<1	<10	<10	<1	<1	<3.80	<3.00	<11	
cis-1,3-Dichloropropene	ug/L	0.4	<50	<50	<50	<5	<1	<10	<10	<1	<1	<3.60	<2.50	<8.4	
Cyclohexane	ug/L	NC	<50	<50	<50	<5	<1	<10	<10	<1	<1	<4.60	<3.80	<16	
Dibromochloromethane	ug/L	50	<50	<50	<50	<5	<1	<10	<10	<1	<1	<3.60	<2.40	<10.0	
Dichlorodifluoromethane	ug/L	5	<50	<50	<50	<5	<1	<10	<10	<1	<1	<4.20	<2.90	<29	
Ethylbenzene	ug/L	5	<50	<50	<50	<5	<1	<10	<10	<1	<1	<3.40	<2.20	<5.1	
Isopropylbenzene	ug/L	5	<50	<50	<50	<5	<1	<10	<10	<1	<1	<3.90	<2.10	<5.8	
Methyl acetate	ug/L	NC	<50	<50	<50	<5	<1	<10	<10	<1	<1	<3.50	<2.20	<10	
Methyl tert-butyl ether (MTBE)	ug/L	NC	<50	<50	<50	<5	<1	<10	<10	<1	<1	<3.80	<2.40	<12	
Methylcyclohexane	ug/L	NC	<50	<50	<50	<5	<1	<10	<10	<1	<1	<4.60	<3.60	<6.4	
Methylene chloride	ug/L	5	<50	<50	<50	<5	<1	<10	<10	0.56 J	<1	<1.98	<19.8	<8.1	
Styrene	ug/L	5	<50	<50	<50	<5	<1	<10	<10	<1	<1	<3.30	<2.50	<6.4	
Tetrachloroethene	ug/L	5	860	300	260	221	189	270	300	116	82	1410	1020	1040	
Toluene	ug/L	5	<50	<50	<50	<5	<1	<10	<10	0.29 J	<1	<3.90	<2.70	<8.3	
trans-1,2-Dichloroethene	ug/L	5	<50	<50	<50	<5	<1	<10	<10	<1	<1	<5.50	<3.50	<7.2	
trans-1,3-Dichloropropene	ug/L	0.4	<50	<50	<50	<5	<1	<10	<10	<1	<1	<3.20	<2.20	<10	
Trichloroethene	ug/L	5	<50	<50	<50	<5	<1	<10	<10	<1	<1	<5.50	<2.70	<15	
Trichlorofluoromethane	ug/L	5	<50	<50	<50	<5	<1	<10	<10	<1	<1	<6.60	<4.50	<14	
Vinyl Chloride	ug/L	2	<50	<50	<50	<5	<1	<10	<10	<1	<1	<4.60	<2.90	<12	
Xylenes (Total)	ug/L	5	<200	<200	<200	<20	<3	<30	<30	<3	<3	<6.30	<6.90	<29	
Total VOCs	ug/L	NA	860.0	300.0	260.0	226.9 J	193.1 J	298.3 J	330.2 J	120.6 J	85.1 J	1410.0	1020.0	1047.3	

Notes:

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ft above msl = feet above mean sea level
BOLD = Exceeds TOGS 1.1.1 Class GA Groundwater Standards/Criteria
* = Analyzed for but Not Detected at the Method Detection Limit (MDL)
J = The concentration was detected at a value below the Reporting Limit (RL) and above the MDL.

R = The result was rejected during data validation.
D = Diluted sample result
units = ug/L or parts per billion
NA = Not Available
NC = No Criteria

Table 1
Groundwater Quality VOC Summary
Groundwater Sampling Report
Brownfield Cleanup Program NO. C360115

Parameter	Units	Well ID:	MW-4S	MW-4S	DUP (MW-4S)	MW-4S	MW-4S	MW-4S	MW-4S	MW-4S	MW-4S	MW-4S	MW-4S
		Screen Interval (ft above msl):	178.4 - 188.5	178.4 - 188.5	178.4 - 188.5	178.4 - 188.5	178.4 - 188.5	178.4 - 188.5	178.4 - 188.5	178.4 - 188.5	178.4 - 188.5	178.4 - 188.5	178.4 - 188.5
		Date Sampled:	11/14/2013 (Post ISCO)	1/14/2014 (Post ISCO)	1/14/2014 (Post ISCO)	7/17/2014 (Post ISCO)	10/10/2014 (Post ISCO)	5/8/2015 (Post ISCO)	10/9/2015 (Post ISCO)	5/4/2016 (Post ISCO)	10/26/2016 (Post ISCO)	5/18/2017 (Post ISCO)	10/30/2017 (Post ISCO)
		6 NYCRR Part 703/TOGS 1.1.1 Class GA Groundwater Standards	On-Site Locations										
Volatle Organic Compounds (VOCs)													
1,1,1-Trichloroethane	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
1,1-Dichloroethane	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
1,1-Dichloroethene	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05
1,2-Dibromoethane (EDB)	ug/L	0.0006	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
1,2-Dichlorobenzene	ug/L	3	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
1,2-Dichloroethane (EDC)	ug/L	0.6	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
1,3-Dichlorobenzene	ug/L	3	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
1,4-Dichlorobenzene	ug/L	3	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
1,4-Dioxane	ug/L	NC	<5	<5	<5	<5	<5	<5	<3	<1	<3	<1	<1
2-Butanone (MEK)	ug/L	50	<10	0.71 J	1.00 J	<100	<10	<200	3.0 J	<100	9.1 J	<10	<10
2-Hexanone	ug/L	50	<10	<10	<10	<100	<10	<200	<100	<100	<10	<10	<10
4-Methyl-2-pentanone (MIBK)	ug/L	NC	<10	<10	<10	<100	<10	<200	<100	<100	0.12 J	<10	<10
Acetone	ug/L	50	3.71 J	2.65 J	3.06 J	9.3 J	4.6 J	<200	<100	<100	11	<10	2.46 J
Benzene	ug/L	1	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Bromochloromethane	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Bromodichloromethane	ug/L	50	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Bromoform	ug/L	50	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Bromomethane	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Carbon disulfide	ug/L	NC	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Carbon tetrachloride	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Chlorobenzene	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Chloroethane	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Chloroform	ug/L	7	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Chloromethane	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	0.16 J	<1	<1
cis-1,2-Dichloroethene	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	0.4	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Cyclohexane	ug/L	NC	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Dibromochloromethane	ug/L	50	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Dichlorodifluoromethane	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Ethylbenzene	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Isopropylbenzene	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Methyl acetate	ug/L	NC	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Methyl tert-butyl ether (MTBE)	ug/L	NC	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Methylcyclohexane	ug/L	NC	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Methylene chloride	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Styrene	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Tetrachloroethene	ug/L	5	10	21	21	899	327	460	730	400	107	158	151
Toluene	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	0.15 J	<1	<1
trans-1,2-Dichloroethene	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	0.4	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Trichloroethene	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Trichlorofluoromethane	ug/L	5	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Vinyl Chloride	ug/L	2	<1	<1	<1	<10	<1	<20	<10	<10	<1	<1	<1
Xylenes (Total)	ug/L	5	<3	<3	<3	<30	<3	<60	<30	<30	<3	<3	<3
Total VOCs	ug/L	NA	13.7 J	24.4 J	25.1 J	899.3 J	331.6 J	460.0	733.0 J	400.0	127.5	158.0	153.5 J

Notes:

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units = ug/L or parts per billion
NA = Not Available
NC = No Criteria

Table 1
Groundwater Quality VOC Summary
Groundwater Sampling Report
Brownfield Cleanup Program NO. C360115

Parameter	Units	Well ID:	MW-4S	MW-4S	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	
		Screen Interval (ft above msl):	178.4 - 188.5	178.4 - 188.5	179.7 - 189.7	179.7 - 189.7	179.7 - 189.7	179.7 - 189.7	179.7 - 189.7	179.7 - 189.7	179.7 - 189.7	179.7 - 189.7	179.7 - 189.7	179.7 - 189.7
		Date Sampled:	04/26/2019 (Post ISCO)	05/21/2020 (Post ISCO)	10/21/2011	5/2/2012	6/10/2013	11/15/2013 (Post ISCO)	1/14/2014 (Post ISCO)	7/17/2014 (Post ISCO)	10/10/2014 (Post ISCO)	5/8/2015 (Post ISCO)	10/9/2015 (Post ISCO)	5/4/2016 (Post ISCO)
		6 NYCRR Part 703/TOGS 1.1.1 Class GA Groundwater Standards	On-Site Locations											
Volatile Organic Compounds (VOCs)														
1,1,1-Trichloroethane	ug/L	5	<1	<5	<0.350	<0.330	<0.27	<1	<1	<1	<1	<1	<1	
1,1,2,2-Tetrachloroethane	ug/L	5	<1	<5	<0.310	<0.320	<0.27	<1	<1	<1	<1	<1	<1	
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	5	<1	<5	<0.440	<0.420	<0.46	<1	<1	<1	<1	<1	<1	
1,1,2-Trichloroethane	ug/L	1	<1	<5	<0.360	<0.220	<0.34	<1	<1	<1	<1	<1	<1	
1,1-Dichloroethane	ug/L	5	<1	<5	<0.430	<0.260	<0.15	<1	<1	<1	<1	<1	<1	
1,1-Dichloroethene	ug/L	5	<1	<5	<0.710	<0.410	<0.27	<1	<1	<1	<1	<1	<1	
1,2,3-Trichlorobenzene	ug/L	5	<1	<5	<0.420	<0.210	<0.25	<1	<1	<1	<1	<1	<1	
1,2,4-Trichlorobenzene	ug/L	5	<1	<5	<0.390	<0.200	<0.24	<1	<1	<1	<1	<1	<1	
1,2-Dibromo-3-chloropropane	ug/L	0.04	<0.05	<0.05	<0.00855	<0.00855	<0.0080	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	
1,2-Dibromoethane (EDB)	ug/L	0.0006	<1	<5	<0.00855	<0.00855	<0.12	<1	<1	<1	<1	<1	<1	
1,2-Dichlorobenzene	ug/L	3	<1	<5	<0.360	<0.230	<0.13	<1	<1	<1	<1	<1	<1	
1,2-Dichloroethane (EDC)	ug/L	0.6	<1	<5	<0.420	<0.200	<0.17	<1	<1	<1	<1	<1	<1	
1,2-Dichloropropane	ug/L	1	<1	<5	<0.520	<0.250	<0.18	<1	<1	<1	<1	<1	<1	
1,3-Dichlorobenzene	ug/L	3	<1	<5	<0.420	<0.230	<0.20	<1	<1	<1	<1	<1	<1	
1,4-Dichlorobenzene	ug/L	3	<1	<5	<0.330	<0.230	<0.18	<1	<1	<1	<1	<1	<1	
1,4-Dioxane	ug/L	NC	<1	<1	<22.5 R	<0.301	<0.97	<5	<5	<5	<5	<5	<1	
2-Butanone (MEK)	ug/L	50	<10	<50	<0.630	<0.550	8.0 J	<10	0.42 J	0.84 J	<10	<10	0.39 J	
2-Hexanone	ug/L	50	<10	<50	<0.260	<0.370	<0.19	<10	<10	<10	<10	<10	<10	
4-Methyl-2-pentanone (MIBK)	ug/L	NC	<10	<50	<0.510	<0.350	<0.35	<10	<10	<10	<10	<10	<10	
Acetone	ug/L	50	2.71 J	5.0 J	<0.870	<0.280	<4.0	1.25 J	1.99 J	6.02 J	<10	0.69 J	<10	
Benzene	ug/L	1	<1	<5	<0.430	<0.250	<0.11	<1	<1	<1	<1	<1	<1	
Bromochloromethane	ug/L	5	<1	<5	<0.470	<0.300	<0.36	<1	<1	<1	<1	<1	<1	
Bromodichloromethane	ug/L	50	<1	<5	<0.350	<0.260	<0.19	<1	<1	<1	<1	<1	<1	
Bromoform	ug/L	50	<1	<5	<0.260	<0.460	<0.35	<1	<1	<1	<1	<1	<1	
Bromomethane	ug/L	5	<1	<5	<0.670	<0.250	<0.18	<1	<1	<1	<1	<1	<1	
Carbon disulfide	ug/L	NC	<1	<5	<0.500	<0.300	<0.13	<1	<1	<1	<1	<1	<1	
Carbon tetrachloride	ug/L	5	<1	<5	<0.400	<0.360	<0.19	<1	<1	<1	<1	<1	<1	
Chlorobenzene	ug/L	5	<1	<5	<0.480	<0.220	<0.16	<1	<1	<1	<1	<1	<1	
Chloroethane	ug/L	5	<1	<5	<0.780	<0.360	<0.21	<1	<1	<1	<1	<1	<1	
Chloroform	ug/L	7	<1	<5	<0.340	<0.220	<0.15	<1	<1	<1	<1	<1	<1	
Chloromethane	ug/L	5	<1	<5	<0.350	<0.280	<0.20	<1	<1	<1	<1	<1	<1	
cis-1,2-Dichloroethene	ug/L	5	<1	<5	<0.380	<0.300	<0.21	<1	<1	<1	<1	<1	<1	
cis-1,3-Dichloropropene	ug/L	0.4	<1	<5	<0.360	<0.250	<0.17	<1	<1	<1	<1	<1	<1	
Cyclohexane	ug/L	NC	<1	<5	<0.460	<0.380	<0.32	<1	<1	<1	<1	<1	<1	
Dibromochloromethane	ug/L	50	<1	<5	<0.360	<0.240	<0.20	<1	<1	<1	<1	<1	<1	
Dichlorodifluoromethane	ug/L	5	<1	<5	<0.420	<0.290	<0.57	<1	<1	<1	<1	<1	<1	
Ethylbenzene	ug/L	5	<1	<5	<0.340	<0.220	<0.10	<1	<1	<1	<1	<1	<1	
Isopropylbenzene	ug/L	5	<1	<5	<0.390	<0.210	<0.12	<1	<1	<1	<1	<1	<1	
Methyl acetate	ug/L	NC	<1	<5	<0.350	<0.220	<0.20	<1	<1	<1	<1	<1	<1	
Methyl tert-butyl ether (MTBE)	ug/L	NC	<1	<5	<0.380	<0.240	<0.25	<1	<1	<1	<1	<1	<1	
Methylcyclohexane	ug/L	NC	<1	<5	<0.460	<0.360	<0.13	<1	<1	<1	<1	<1	<1	
Methylene chloride	ug/L	5	0.48	<5	<1.98	<1.98	<0.16	<1	<1	<1	<1	<1	<1	
Styrene	ug/L	5	<1	<5	<0.330	<0.250	<0.13	<1	<1	<1	<1	<1	<1	
Tetrachloroethene	ug/L	5	24	387	9.19	3.14	165	5	67	5	4	4	2	
Toluene	ug/L	5	<1	<5	<0.390	<0.270	<0.17	<1	<1	<1	<1	<1	<1	
trans-1,2-Dichloroethene	ug/L	5	<1	<5	<0.550	<0.350	<0.14	<1	<1	<1	<1	<1	<1	
trans-1,3-Dichloropropene	ug/L	0.4	<1	<5	<0.320	<0.220	<0.20	<1	<1	<1	<1	<1	<1	
Trichloroethene	ug/L	5	<1	<5	<0.550	<0.270	<0.29	<1	<1	<1	<1	<1	<1	
Trichlorofluoromethane	ug/L	5	<1	<5	<0.660	<0.450	<0.28	<1	<1	<1	<1	<1	<1	
Vinyl Chloride	ug/L	2	<1	<5	<0.460	<0.290	<0.24	<1	<1	<1	<1	<1	<1	
Xylenes (Total)	ug/L	5	<3	<20	<0.630	<0.690	<0.58	<3	<3	<3	<3	<3	<3	
Total VOCs	ug/L	NA	27.2 J	392.0 J	9.2	3.1	173.0 J	6.3 J	69.4 J	11.9 J	4.0	4.7 J	2.0	

Notes:

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R = The result was rejected during data validation.
 D = Diluted sample result
units = ug/L or parts per billion
NA = Not Available
NC = No Criteria

Table 1
Groundwater Quality VOC Summary
Groundwater Sampling Report
Brownfield Cleanup Program NO. C360115

Parameter	Units	Well ID:	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6
		Screen Interval (ft above msl):	179.6 - 189.6	179.6 - 189.6	179.6 - 189.6	179.6 - 189.6	179.6 - 189.6	179.6 - 189.6
		Date Sampled:	10/9/2015 (Post ISCO)	5/4/2016 (Post ISCO)	10/26/2016 (Post ISCO)	5/18/2017 (Post ISCO)	10/30/2017 (Post ISCO)	05/15/2018 (Post ISCO)
		6 NYCRR Part 703/TOGS 1.1.1 Class GA Groundwater Standards	Off-Site Upgradient Locations					
Volatile Organic Compounds (VOCs)								
1,1,1-Trichloroethane	ug/L	5	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	5	<1	<1	<1	<1	<1	<1
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	5	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	5	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	5	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	5	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	5	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	0.04	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05
1,2-Dibromoethane (EDB)	ug/L	0.0006	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	3	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane (EDC)	ug/L	0.6	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	3	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	3	<1	<1	<1	<1	<1	<1
1,4-Dioxane	ug/L	NC	<3	<1	<3	<3	<1	<1
2-Butanone (MEK)	ug/L	50	<10	<10	<10	<10	<10	1.37 J
2-Hexanone	ug/L	50	<10	<10	<10	<10	<10	<10
4-Methyl-2-pentanone (MIBK)	ug/L	NC	<10	<10	<10	<10	<10	0.22 J
Acetone	ug/L	50	<10	0.99 J	45	<10	2.24 J	5.35 J
Benzene	ug/L	1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	5	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	50	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	50	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	5	<1	<1	<1	<1	<1	<1
Carbon disulfide	ug/L	NC	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	5	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	5	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	5	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	7	<1	<1	<1	<1	<1	<1
Chloromethane	ug/L	5	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	5	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	0.4	<1	<1	<1	<1	<1	<1
Cyclohexane	ug/L	NC	<1	<1	<1	<1	<1	<1
Dibromochloromethane	ug/L	50	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	5	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	5	<1	<1	<1	<1	<1	<1
Isopropylbenzene	ug/L	5	<1	<1	<1	<1	<1	<1
Methyl acetate	ug/L	NC	<1	<1	<1	<1	<1	<1
Methyl tert-butyl ether (MTBE)	ug/L	NC	<1	<1	<1	<1	<1	<1
Methyldichloromethane	ug/L	NC	<1	<1	<1	<1	<1	<1
Methylene chloride	ug/L	5	<1	<1	<1	<1	<1	<1
Styrene	ug/L	5	<1	<1	<1	<1	<1	<1
Tetrachloroethene	ug/L	5	<1	<1	<1	<1	<1	<1
Toluene	ug/L	5	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	5	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	0.4	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	5	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	5	<1	<1	<1	<1	<1	<1
Vinyl Chloride	ug/L	2	<1	<1	<1	<1	<1	<1
Xylenes (Total)	ug/L	5	<3	<3	<3	<3	<3	<3
Total VOCs	ug/L	NA	---	1.0 J	45.0	---	2.2 J	6.9 J

Notes:

6 NYCRR Part 703 and TOGS 1.1.1 = Division of Water Technical and Operational Guidance Series:
 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations
ft above msl = feet above mean sea level
BOLD = Exceeds TOGS 1.1.1 Class GA Groundwater Standards/Criteria
 * = Analyzed for but Not Detected at the Method Detection Limit (MDL)
 J = The concentration was detected at a value below the Reporting Limit (RL) and above the MDL.

R = The result was rejected during data validation.
D = Diluted sample result
units = ug/L or parts per billion
NA = Not Available
NC = No Criteria

Table 1
Groundwater Quality VOC Summary
Groundwater Sampling Report
Brownfield Cleanup Program NO. C360115

Parameter		Well ID:	MW-95B	MW-95B	MW-95B	MW-95B
		Screen Interval (ft above msl):	144.8 - 155.8	144.8 - 155.8	144.8 - 155.8	144.8 - 155.8
		Date Sampled:	10/30/2017 (Post ISCO)	05/15/2018 (Post ISCO)	04/26/2019 (Post ISCO)	05/21/2020 (Post ISCO)
		6 NYCRR Part 703/TOGS 1.1.1 Class GA Groundwater Standards	Off-Site Downgradient Locations			
Volatile Organic Compounds (VOCs)	Units					
1,1,1-Trichloroethane	ug/L	5	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	5	<1	<1	<1	<1
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	5	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	5	<1	<1	<1	<1
1,1-Dichloroethene	ug/L	5	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	5	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	5	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	0.04	<0.05	<0.05	<0.05	<0.05
1,2-Dibromoethane (EDB)	ug/L	0.0006	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	3	<1	<1	<1	<1
1,2-Dichloroethane (EDC)	ug/L	0.6	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	3	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	3	<1	<1	<1	<1
1,4-Dioxane	ug/L	NC	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	50	<10	1.31 J	<10	<10
2-Hexanone	ug/L	50	<10	<10	<10	<10
4-Methyl-2-pentanone (MIBK)	ug/L	NC	<10	0.12 J	<10	<10
Acetone	ug/L	50	2.61 J	4.95 J	2.82 J	2.14 J
Benzene	ug/L	1	<1	<1	<1	<1
Bromochloromethane	ug/L	5	<1	<1	<1	<1
Bromodichloromethane	ug/L	50	<1	<1	<1	<1
Bromoform	ug/L	50	<1	<1	<1	<1
Bromomethane	ug/L	5	<1	<1	<1	<1
Carbon disulfide	ug/L	NC	<1	<1	<1	<1
Carbon tetrachloride	ug/L	5	<1	<1	<1	<1
Chlorobenzene	ug/L	5	<1	<1	<1	<1
Chloroethane	ug/L	5	<1	<1	<1	<1
Chloroform	ug/L	7	0.40 J	<1	0.20 J	<1
Chloromethane	ug/L	5	<1	<1	<1	<1
cis-1,2-Dichloroethene	ug/L	5	<1	<1	<1	<1
cis-1,3-Dichloropropene	ug/L	0.4	<1	<1	<1	<1
Cyclohexane	ug/L	NC	<1	<1	<1	<1
Dibromochloromethane	ug/L	50	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	5	<1	<1	<1	<1
Ethylbenzene	ug/L	5	<1	<1	<1	<1
Isopropylbenzene	ug/L	5	<1	<1	<1	<1
Methyl acetate	ug/L	NC	<1	<1	<1	<1
Methyl tert-butyl ether (MTBE)	ug/L	NC	<1	<1	<1	<1
Methylcyclohexane	ug/L	NC	<1	<1	<1	<1
Methylene chloride	ug/L	5	<1	<1	0.32 J	<1
Styrene	ug/L	5	<1	<1	<1	<1
Tetrachloroethene	ug/L	5	<1	0.28 J	0.49 J	<1
Toluene	ug/L	5	<1	<1	<1	<1
trans-1,2-Dichloroethene	ug/L	5	<1	<1	<1	<1
trans-1,3-Dichloropropene	ug/L	0.4	<1	<1	<1	<1
Trichloroethene	ug/L	5	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	5	<1	<1	<1	<1
Vinyl Chloride	ug/L	2	<1	<1	<1	<1
Xylenes (Total)	ug/L	5	<3	<3	<3	<3
Total VOCs	ug/L	NA	3.0 J	6.7 J	3.8 J	2.1 J

Notes:

6 NYCRR Part 703 and TOGS 1.1.1 = Division of Water Technical and Operational Guidance Series:

Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations

ft above msl = feet above mean sea level

BOLD = Exceeds TOGS 1.1.1 Class GA Groundwater Standards/Criteria

* = Analyzed for but Not Detected at the Method Detection Limit (MDL)

J = The concentration was detected at a value below the Reporting Limit (RL) and above the MDL.

R = The result was rejected during data validation.

D = Diluted sample result

units = ug/L or parts per billion

NA = Not Available

NC = No Criteria

FIGURES



Legend

- OVERBURDEN MONITORING WELL
- SHALLOW BEDROCK MONITORING WELL
- DEEP BEDROCK MONITORING WELL
- PROPERTY BOUNDARY

Note:
MW-6 and MW-6SB Decomissioned December 2018



GROUNDWATER MONITORING
WELL LOCATIONS
BROWNFIELD CLEANUP PROGRAM

Program No. C360115
1-5 Holland Avenue
White Plains, NY

FIGURE 01



LEGEND

- OVERBURDEN MONITORING WELL
- GROUNDWATER CONTOUR

NOTE:

ALL GROUNDWATER ELEVATIONS ARE MEASURED AS FEET ABOVE MEAN SEA LEVEL (ft amsl) TO THE VERTICAL DATUM NAVD88.

0 35 70 140 Feet

GROUNDWATER MONITORING REPORT
OVERBURDEN GROUNDWATER ELEVATION CONTOURS
5/21/2020

BROWNFIELD CLEANUP PROGRAM NO. C360115
1-5 HOLLAND AVENUE
WHITE PLAINS, NY

FIGURE 2



LEGEND

◆ SHALLOW BEDROCK MONITORING WELL

— GROUNDWATER CONTOUR

NOTE:
ALL GROUND WATER ELEVATIONS ARE MEASURED
AS FEET ABOVE MEAN SEA LEVEL (ft amsl)
TO THE VERTICAL DATUM NAVD88.



**GROUNDWATER MONITORING
REPORT**
**SHALLOW BEDROCK GROUNDWATER
ELEVATION CONTOURS**
5/21/2020

**BROWNFIELD CLEANUP
PROGRAM NO. C360115**
1-5 HOLLAND AVENUE
WHITE PLAINS, NY

FIGURE 3

MAY 2020
14206.75107

O'BRIEN & GERE ENGINEERS, INC.
A RAMBOLL COMPANY



APPENDICES



APPENDIX A GROUNDWATER SAMPLING LOGS

Summary of Field Water Quality Parameters

Location ID	Ground Elevation (ft amsl)	Well Casing Elevation (ft amsl)	Well Screen Interval (ft)		Well Screen Interval (ft bgs)	Hydrogeologic Screen Interval	Date Deployment	Time Deployment	Depth to GW (PVC)	Date Retrieval/Sample Collection	Time Collected	Depth to GW (PVC)	Field Parameters					
			Top	Bottom									pH	Temp. (°C)	Spec. Conductance (mS/cm)	ORP (mV)	TDS (ppm)	Dis. Ox. (mg/L)
MW-1	198.9	198.61	192.7	182.7	5.9-15.9	Overburden	4/28/2020	1145	11.16	5/21/2020	1355	11.1	7.41	13.71	1.61	64.1	1079	5.46
MW-2	204.7	204.39	191.4	181.4	13-23	Overburden	4/28/2020	1052	17.2	5/21/2020	1235	17.24	7.39	13.19	1.78	37.9	1193	6.2
MW-2DB	204.3	204.04	136.3	126.3	68-78	Deep Bedrock	4/28/2020	1045	16.6	5/21/2020	1150	16.57	7.96	13.49	0.34	-56.9	228	0.93
MW-2SB	203.9	203.55	158.9	148.9	45-55	Shallow Bedrock	4/28/2020	1050	16.22	5/21/2020	1220	16.02	7.96	13.63	0.32	-72.9	211	1.48
MW-4S	202.5	202.27	188.5	178.4	14-24	Overburden	4/28/2020	1202	14.55	5/21/2020	1435	14.45	10.43	14.43	0.67	-20.2	449	3.54
MW-4D	202.5	202.07	168.0	158.0	34.5-44.5	Shallow Bedrock	4/28/2020	1200	14.35	5/21/2020	1420	14.28	9.27	14.16	0.58	3.5	389	38.7
MW-5	203.7	203.39	189.7	179.7	14-24	Overburden	4/28/2020	1111	16.24	5/21/2020	1335	16.25	7.97	11.29	0.15	46.4	101	10.13
MW-5DB	203.4	203.07	115.4	105.4	88-98	Deep Bedrock	4/28/2020	1105	15.68	5/21/2020	1310	15.44	8.99	12.73	0.35	-202.4	234	0.7
MW-5SB	203.1	202.80	155.1	145.1	48-58	Shallow Bedrock	4/28/2020	1100	15.35	5/21/2020	1325	15.34	7.91	12.91	0.61	-162.4	409	1.22
MW-7	200.2	199.73	185.2	175.2	15-25	Overburden	4/28/2020	930	14.25	5/21/2020	1020	14.46	7.68	13.18	0.75	1.6	499	7.7
MW-7SB	200.2	199.79	156.2	146.2	44-54	Shallow Bedrock	4/28/2020	940	~13.75	5/21/2020	1030	13.78	7.62	12.9	2.50	-95.4	1678	1.22
MW-8	197.6	197.34	182.6	172.6	15-25	Overburden	4/28/2020	1010	11.28	5/21/2020	1055	11.47	7.03	13.01	3.38	-94.0	2265	1.38

Summary of Field Water Quality Parameters

Location ID	Ground Elevation (ft amsl)	Well Casing Elevation (ft amsl)	Well Screen Interval (ft)		Well Screen Interval (ft bgs)	Hydrogeologic Screen Interval	Date Deployment	Time Deployment	Depth to GW (PVC)	Date Retrieval/Sample Collection	Time Collected	Depth to GW (PVC)	Field Parameters					
			Top	Bottom									pH	Temp. (°C)	Spec. Conductance (mS/cm)	ORP (mV)	TDS (ppm)	Dis. Ox. (mg/L)
MW-8SB	197.3	196.68	152.3	142.3	45-55	Shallow Bedrock	4/28/2020	1015	10.6	5/21/2020	1105	10.7	7.02	13.29	2.49	-18.0	1668	0.92
MW-9	201.3	200.80	186.3	176.3	15-25	Overburden	4/28/2020	950	15.25	5/21/2020	945	15.39	7.15	11.75	2.34	37.5	1568	6.62
MW-9SB	201.3	200.76	155.3	145.3	46-56	Shallow Bedrock	4/28/2020	951	15.07	5/21/2020	935	14.95	7.45	12.48	1.02	-69.5	686	0.69

Field Note Blind Duplicate Installed: MW-2SB
MS/MSD Installed: MW-2SB
TDS calculation = (TDS) ppm = Conductivity mS/cm x 0.67 x 1,000

Sampler Deployment: Mark Randazzo
Sampler Retrieval: Mark Randazzo



PDB Groundwater Sampling Log

Well ID: MW-1

Project No.: 75107
Site Name: 1-5 Holland Avenue
Site Loc.: One Holland Avenue Development

Field Personnel: MAR
Date: 5/21/20
Weather: Cloudy

Well Information:

Depth of Well: 15.9 ft. bmp*
Depth to Water: 11.10 ft. bmp*
Length of Water Column (LWC): 4.8 ft.
PDB Midpoint: 13.5 ft.

* Measurement Point:

- ☒ Well Casing
☐ Protective Casing
☐ Other: _____

PDB Installation Date:

4/28/20

PDB Removal Date:

5/21/20

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA	<u>3</u>	No	HCL	<2

Notes:



PDB Groundwater Sampling Log

Well ID: MW-45

Project No.: 75107
Site Name: 1-5 Holland Avenue
Site Loc.: One Holland Avenue Development

Field Personnel: MAR
Date: 5/21/20
Weather: Cloudy

Well Information:

Depth of Well: 24 ft. bmp*
Depth to Water: 14.45 ft. bmp*
Length of Water Column (LWC): 19.45 ft. 9.6
PDB Midpoint: 19.2 ft.

* Measurement Point:

- ☒ Well Casing
☐ Protective Casing
☐ Other: _____

PDB Installation Date:

4/28/20

PDB Removal Date:

5/21/20

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA	<u>3</u>	No	HCL	<2

Notes:



PDB Groundwater Sampling Log

Well ID: M44D

Project No.: 75107
Site Name: 1-5 Holland Avenue
Site Loc.: One Holland Avenue Development

Field Personnel: MAR
Date: 5/21/20
Weather: Cloudy

Well Information:

Depth of Well: 44.5 ft. bmp*
Depth to Water: 14.28 ft. bmp*
Length of Water Column (LWC): 30.2 ft.
PDB Midpoint: 39.5 ft.

* Measurement Point:

- ☒ Well Casing
☐ Protective Casing
☐ Other: _____

PDB Installation Date:

4/28/20

PDB Removal Date:

5/21/20

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA	<u>3</u>	No	HCL	<2

Notes:



PDB Groundwater Sampling Log

Well ID: _____

Project No.: 75107
Site Name: 1-5 Holland Avenue
Site Loc.: One Holland Avenue Development

Field Personnel: MAR
Date: _____
Weather: Cloudy

Well Information:

Depth of Well: _____ ft. bmp*
Depth to Water: _____ ft. bmp*
Length of Water Column (LWC): _____ ft.
PDB Midpoint: _____ ft.

* Measurement Point:

- ☒ Well Casing
☐ Protective Casing
☐ Other: _____

PDB Installation Date:

4

PDB Removal Date:

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA		No	HCL	<2

Notes:



PDB Groundwater Sampling Log

Well ID: MW-2Project No.: 75107Field Personnel: MARSite Name: 1-5 Holland AvenueDate: 5/21/20Site Loc.: One Holland Avenue DevelopmentWeather: Cloudy

Well Information:

Depth of Well: 23 ft. bmp*

* Measurement Point:

Depth to Water: 17.24 ft. bmp*☒ Well CasingLength of Water Column (LWC): 5.8 ft.☐ Protective CasingPDB Midpoint: 20 ft.☐ Other: _____PDB Installation Date: 4/28/20PDB Removal Date: 5/21/20

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA	<u>3</u>	No	HCL	<2

Notes:



PDB Groundwater Sampling Log

Well ID: MW-2DBProject No.: 75107Field Personnel: MARSite Name: 1-5 Holland AvenueDate: 5/21/20Site Loc.: One Holland Avenue DevelopmentWeather: Cloudy

Well Information:

Depth of Well: 78 ft. bmp*

* Measurement Point:

Depth to Water: 16.57 ft. bmp*☒ Well CasingLength of Water Column (LWC): 61.4 ft.☐ Protective CasingPDB Midpoint: 73 ft.☐ Other: _____PDB Installation Date: 4/28/20PDB Removal Date: 5/21/20

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA	<u>3</u>	No	HCL	<2

Notes:



PDB Groundwater Sampling Log

Well ID: MW-25B

Project No.: 75107
Site Name: 1-5 Holland Avenue
Site Loc.: One Holland Avenue Development

Field Personnel: MAR
Date: 5/21/20
Weather: Cloudy

Well Information:

Depth of Well: 55 ft. bmp*
Depth to Water: 17.2 ft. bmp* 16.02
Length of Water Column (LWC): 50 ft. 38.98
PDB Midpoint: 50 ft.

* Measurement Point:

- ☒ Well Casing
☐ Protective Casing
☐ Other: _____

PDB Installation Date: 4/28/20
PDB Removal Date: 5/21/20

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA	<u>3</u>	No	HCL	<2

Notes: MS/MSD collected, Blind Duplicate collected



PDB Groundwater Sampling Log

Well ID: MW-5

Project No.: 75107
Site Name: 1-5 Holland Avenue
Site Loc.: One Holland Avenue Development

Field Personnel: MAR
Date: 5/21/20
Weather: Cloudy

Well Information:

Depth of Well: 24 ft. bmp*
Depth to Water: 16.25 ft. bmp*
Length of Water Column (LWC): 7.75 ft.
PDB Midpoint: 18 ft. 20.12

* Measurement Point:

- ☒ Well Casing
☐ Protective Casing
☐ Other: _____

PDB Installation Date: 4/28/20
PDB Removal Date: 5/21/20

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA	<u>3</u>	No	HCL	<2

Notes:



PDB Groundwater Sampling Log

Well ID: MW-50B

Project No.: 75107
Site Name: 1-5 Holland Avenue
Site Loc.: One Holland Avenue Development

Field Personnel: MAR
Date: 5/21/20
Weather: Cloudy

Well Information:

Depth of Well: 98 ft. bmp*
Depth to Water: 15.44 ft. bmp*
Length of Water Column (LWC): 82.5 ft.
PDB Midpoint: 93 ft.

* Measurement Point:

- ☒ Well Casing
☐ Protective Casing
☐ Other: _____

PDB Installation Date:

4/28/20

PDB Removal Date:

5/21/20

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA	<u>3</u>	No	HCL	<2

Notes:



PDB Groundwater Sampling Log

Well ID: MW-55B

Project No.: 75107
Site Name: 1-5 Holland Avenue
Site Loc.: One Holland Avenue Development

Field Personnel: MAR
Date: 5/21/20
Weather: Cloudy

Well Information:

Depth of Well: 58 ft. bmp*
Depth to Water: 15.34 ft. bmp*
Length of Water Column (LWC): 42.7 ft.
PDB Midpoint: 53 ft.

* Measurement Point:

- ☒ Well Casing
☐ Protective Casing
☐ Other: _____

PDB Installation Date:

4/28/20

PDB Removal Date:

5/21/20

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA	<u>3</u>	No	HCL	<2

Notes:



PDB Groundwater Sampling Log

Well ID: Mw-7

Project No.: 75107
Site Name: 1-5 Holland Avenue
Site Loc.: One Holland Avenue Development

Field Personnel: MAR
Date: 5/21/20
Weather: Cloudy

Well Information:

Depth of Well: 25 ft. bmp*
Depth to Water: 17.46 ft. bmp*
Length of Water Column (LWC): 10.54 ft.
PDB Midpoint: 20 ft.

* Measurement Point:

- ☒ Well Casing
☐ Protective Casing
☐ Other: _____

PDB Installation Date:

4/28/20

PDB Removal Date:

5/21/20

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA	<u>3</u>	No	HCL	<2

Notes:



PDB Groundwater Sampling Log

Well ID: Mw-7SB

Project No.: 75107
Site Name: 1-5 Holland Avenue
Site Loc.: One Holland Avenue Development

Field Personnel: MAR
Date: 5/21/20
Weather: Cloudy

Well Information:

Depth of Well: 54 ft. bmp*
Depth to Water: 13.78 ft. bmp*
Length of Water Column (LWC): 40.2 ft.
PDB Midpoint: 49 ft.

* Measurement Point:

- ☒ Well Casing
☐ Protective Casing
☐ Other: _____

PDB Installation Date:

4/28/20

PDB Removal Date:

5/21/20

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA	<u>3</u>	No	HCL	<2

Notes:



PDB Groundwater Sampling Log

Well ID: MW-8Project No.: 75107Field Personnel: MARSite Name: 1-5 Holland Avenue

Date: _____

Site Loc.: One Holland Avenue DevelopmentWeather: Cloudy

Well Information:

Depth of Well: 25 ft. bmp*

* Measurement Point:

Depth to Water: 11.47 ft. bmp*☒ Well CasingLength of Water Column (LWC): 13.53 ft.☐ Protective CasingPDB Midpoint: 20 ft.☐ Other: _____PDB Installation Date: 4/28/20PDB Removal Date: 5/21/20

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA	<u>3</u>	No	HCL	<2

Notes:



PDB Groundwater Sampling Log

Well ID: MW-8SBProject No.: 75107Field Personnel: MARSite Name: 1-5 Holland Avenue

Date: _____

Site Loc.: One Holland Avenue DevelopmentWeather: Cloudy

Well Information:

Depth of Well: 55 ft. bmp*

* Measurement Point:

Depth to Water: 10.70 ft. bmp*☒ Well CasingLength of Water Column (LWC): 44.3 ft.☐ Protective CasingPDB Midpoint: 50 ft.☐ Other: _____PDB Installation Date: 4/28/20PDB Removal Date: 5/21/20

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA	<u>3</u>	No	HCL	<2

Notes:



PDB Groundwater Sampling Log

Well ID: MW-9

Project No.: 75107
Site Name: 1-5 Holland Avenue
Site Loc.: One Holland Avenue Development

Field Personnel: MAR
Date: 5/21/20
Weather: Cloudy

Well Information:

Depth of Well: 25 ft. bmp*
Depth to Water: 15.39 ft. bmp*
Length of Water Column (LWC): 9.61 ft.
PDB Midpoint: 20.2 ft.

* Measurement Point:

- ☒ Well Casing
☐ Protective Casing
☐ Other: _____

PDB Installation Date:

4/28/20

PDB Removal Date:

5/21/20

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA	<u>3</u>	No	HCL	<2

Notes:



PDB Groundwater Sampling Log

Well ID: MW-9SB

Project No.: 75107
Site Name: 1-5 Holland Avenue
Site Loc.: One Holland Avenue Development

Field Personnel: MAR
Date: 5/21/20
Weather: Cloudy

Well Information:

Depth of Well: 56 ft. bmp*
Depth to Water: 14.95 ft. bmp*
Length of Water Column (LWC): 41.05 ft.
PDB Midpoint: 51 ft.

* Measurement Point:

- ☒ Well Casing
☐ Protective Casing
☐ Other: _____

PDB Installation Date:

4/28/20

PDB Removal Date:

5/21/20

Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	VOA	<u>3</u>	No	HCL	<2

Notes:



APPENDIX B
MERIT'S LABORATORY ANALYTICAL REPORT



Analytical Laboratory Report

Report ID: S14189.01(01)
Generated on 06/09/2020

Report to

Attention: Mark Randazzo
O'Brien & Gere Engineers
50 Main St, Suite 1060
White Plains, NY 10606

Phone: 781-883-6432 FAX:
Email: mark.randazzo@ramboll.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Lavery (johnlavery@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S14189.01-S14189.19
Project: OHAD - BCP No. C360115
Collected Date(s): 05/21/2020
Submitted Date/Time: 05/22/2020 10:30
Sampled by: Mark Randazzo
P.O. #: 12000363

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Maya Murshak
Technical Director



Analytical Laboratory Report

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.
Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)

Report Narrative

There is no additional narrative for this analytical report

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched



Analytical Laboratory Report

Method Summary

Method	Version
N/A	Not Applicable
SW5030C/8260C	SW 846 Method 8260C Revision 3 August 2006 / 5030C Revision 3 May 2003
SW8260B - SIM	SW 846 Method 8260B Revision 2 December 1996 SIMs



Analytical Laboratory Report

Sample Summary (19 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S14189.01	MW-1	Groundwater	05/21/20 13:55
S14189.02	MW-2	Groundwater	05/21/20 12:35
S14189.03	MW-2SB	Groundwater	05/21/20 12:20
S14189.04	MW-2SB MS	Groundwater	05/21/20 12:20
S14189.05	MW-2SB MSD	Groundwater	05/21/20 12:20
S14189.06	MW-2DB	Groundwater	05/21/20 11:50
S14189.07	MW-4S	Groundwater	05/21/20 14:35
S14189.08	MW-4D	Groundwater	05/21/20 14:20
S14189.09	MW-5	Groundwater	05/21/20 13:35
S14189.10	MW-5SB	Groundwater	05/21/20 13:25
S14189.11	MW-5DB	Groundwater	05/21/20 13:10
S14189.12	MW-7	Groundwater	05/21/20 10:20
S14189.13	MW-7SB	Groundwater	05/21/20 10:30
S14189.14	MW-8	Groundwater	05/21/20 10:55
S14189.15	MW-8SB	Groundwater	05/21/20 11:05
S14189.16	MW-9	Groundwater	05/21/20 09:45
S14189.17	MW-9SB	Groundwater	05/21/20 09:35
S14189.18	MW-BD-1	Groundwater	05/21/20 00:01
S14189.19	TB-1	Water	05/21/20 00:01



Analytical Laboratory Report

Lab Sample ID: S14189.01

Sample Tag: MW-1

Collected Date/Time: 05/21/2020 13:55

Matrix: Groundwater

COC Reference: 134347

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/20 09:00	JML	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 06/02/20 16:26, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromo-3-chloropropane*	Not detected	0.05		ug/L	1	96-12-8	
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/02/20 16:43, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1	0.18	ug/L	1	76-13-1	
Acetone	2.69	10	0.56	ug/L	1	67-64-1	JB
Carbon disulfide	Not detected	1	0.24	ug/L	1	75-15-0	
Methyl Acetate	Not detected	1	0.25	ug/L	1	79-20-9	
tert-Methyl butyl ether (MTBE)	Not detected	1	0.19	ug/L	1	1634-04-4	
2-Butanone (MEK)	Not detected	10	0.26	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	1	0.50	ug/L	1	75-71-8	
Chloromethane	Not detected	1	0.26	ug/L	1	74-87-3	
Vinyl chloride	Not detected	1	0.31	ug/L	1	75-01-4	
Bromomethane	Not detected	1	0.32	ug/L	1	74-83-9	
Chloroethane	Not detected	1	0.34	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.33	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.27	ug/L	1	75-35-4	
Methylene chloride	Not detected	1	0.29	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1	0.20	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.20	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1	0.26	ug/L	1	156-59-2	
Chloroform	0.20	1	0.20	ug/L	1	67-66-3	J
Bromochloromethane	Not detected	1	0.38	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.28	ug/L	1	71-55-6	
Cyclohexane	Not detected	1	0.29	ug/L	1	110-82-7	
4-Methyl-2-pentanone (MIBK)	Not detected	10	0.14	ug/L	1	108-10-1	
2-Hexanone	Not detected	10	0.29	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.20	ug/L	1	56-23-5	
Benzene	Not detected	1	0.20	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.16	ug/L	1	107-06-2	
Trichloroethene	Not detected	1	0.23	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.20	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.23	ug/L	1	75-27-4	
Methyl cyclohexane	Not detected	1	0.21	ug/L	1	108-87-2	
cis-1,3-Dichloropropene	Not detected	1	0.19	ug/L	1	10061-01-5	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.01 (continued)

Sample Tag: MW-1

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/02/20 16:43, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Toluene	Not detected	1	0.25	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.25	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.28	ug/L	1	79-00-5	
Tetrachloroethene	6	1	0.20	ug/L	1	127-18-4	
Dibromochloromethane	Not detected	1	0.24	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.30	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.17	ug/L	1	108-90-7	
Ethylbenzene	Not detected	1	0.26	ug/L	1	100-41-4	
Total Xylenes	Not detected	3	0.66	ug/L	1	1330-20-7	
Styrene	Not detected	1	0.18	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	1	0.25	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.22	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.18	ug/L	1	79-34-5	
1,3-Dichlorobenzene	Not detected	1	0.24	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.23	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.28	ug/L	1	95-50-1	
1,2,4-Trichlorobenzene	Not detected	1	0.19	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	1	0.20	ug/L	1	87-61-6	



Analytical Laboratory Report

Lab Sample ID: S14189.02

Sample Tag: MW-2

Collected Date/Time: 05/21/2020 12:35

Matrix: Groundwater

COC Reference: 134347

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/20 09:00	JML	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 06/02/20 16:48, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromo-3-chloropropane*	Not detected	0.05		ug/L	1	96-12-8	
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/03/20 17:19, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	5	0.92	ug/L	5	76-13-1	Y
Acetone	4.4	50	2.8	ug/L	5	67-64-1	JBY
Carbon disulfide	Not detected	5	1.2	ug/L	5	75-15-0	Y
Methyl Acetate	Not detected	5	1.2	ug/L	5	79-20-9	Y
tert-Methyl butyl ether (MTBE)	Not detected	5	0.95	ug/L	5	1634-04-4	Y
2-Butanone (MEK)	Not detected	50	1.3	ug/L	5	78-93-3	Y
Dichlorodifluoromethane	Not detected	5	2.5	ug/L	5	75-71-8	Y
Chloromethane	Not detected	5	1.3	ug/L	5	74-87-3	Y
Vinyl chloride	Not detected	5	1.5	ug/L	5	75-01-4	Y
Bromomethane	Not detected	5	1.6	ug/L	5	74-83-9	Y
Chloroethane	Not detected	5	1.7	ug/L	5	75-00-3	Y
Trichlorofluoromethane	Not detected	5	1.6	ug/L	5	75-69-4	Y
1,1-Dichloroethene	Not detected	5	1.3	ug/L	5	75-35-4	Y
Methylene chloride	Not detected	5	1.4	ug/L	5	75-09-2	Y
trans-1,2-Dichloroethene	Not detected	5	0.99	ug/L	5	156-60-5	Y
1,1-Dichloroethane	Not detected	5	1.0	ug/L	5	75-34-3	Y
cis-1,2-Dichloroethene	Not detected	5	1.3	ug/L	5	156-59-2	Y
Chloroform	Not detected	5	1.0	ug/L	5	67-66-3	Y
Bromochloromethane	Not detected	5	1.9	ug/L	5	74-97-5	Y
1,1,1-Trichloroethane	Not detected	5	1.4	ug/L	5	71-55-6	Y
Cyclohexane	Not detected	5	1.4	ug/L	5	110-82-7	Y
4-Methyl-2-pentanone (MIBK)	Not detected	50	0.71	ug/L	5	108-10-1	Y
2-Hexanone	Not detected	50	1.4	ug/L	5	591-78-6	Y
Carbon tetrachloride	Not detected	5	0.98	ug/L	5	56-23-5	Y
Benzene	Not detected	5	1.00	ug/L	5	71-43-2	Y
1,2-Dichloroethane	Not detected	5	0.78	ug/L	5	107-06-2	Y
Trichloroethene	Not detected	5	1.2	ug/L	5	79-01-6	Y
1,2-Dichloropropane	Not detected	5	1.0	ug/L	5	78-87-5	Y
Bromodichloromethane	Not detected	5	1.1	ug/L	5	75-27-4	Y
Methyl cyclohexane	Not detected	5	1.0	ug/L	5	108-87-2	Y

Y-Elevated reporting limit due to high target concentration

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.02 (continued)

Sample Tag: MW-2

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/03/20 17:19, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,3-Dichloropropene	Not detected	5	0.97	ug/L	5	10061-01-5	Y
Toluene	Not detected	5	1.2	ug/L	5	108-88-3	Y
trans-1,3-Dichloropropene	Not detected	5	1.3	ug/L	5	10061-02-6	Y
1,1,2-Trichloroethane	Not detected	5	1.4	ug/L	5	79-00-5	Y
Tetrachloroethene	199	5	1.0	ug/L	5	127-18-4	Y
Dibromochloromethane	Not detected	5	1.2	ug/L	5	124-48-1	Y
1,2-Dibromoethane	Not detected	5	1.5	ug/L	5	106-93-4	Y
Chlorobenzene	Not detected	5	0.84	ug/L	5	108-90-7	Y
Ethylbenzene	Not detected	5	1.3	ug/L	5	100-41-4	Y
Total Xylenes	Not detected	20	3.3	ug/L	5	1330-20-7	Y
Styrene	Not detected	5	0.89	ug/L	5	100-42-5	Y
Isopropylbenzene	Not detected	5	1.2	ug/L	5	98-82-8	Y
Bromoform	Not detected	5	1.1	ug/L	5	75-25-2	Y
1,1,2,2-Tetrachloroethane	Not detected	5	0.90	ug/L	5	79-34-5	Y
1,3-Dichlorobenzene	Not detected	5	1.2	ug/L	5	541-73-1	Y
1,4-Dichlorobenzene	Not detected	5	1.1	ug/L	5	106-46-7	Y
1,2-Dichlorobenzene	Not detected	5	1.4	ug/L	5	95-50-1	Y
1,2,4-Trichlorobenzene	Not detected	5	0.96	ug/L	5	120-82-1	Y
1,2,3-Trichlorobenzene	Not detected	5	1.0	ug/L	5	87-61-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S14189.03

Sample Tag: MW-2SB

Collected Date/Time: 05/21/2020 12:20

Matrix: Groundwater

COC Reference: 134347

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	40ml Glass	HCL	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/20 09:00	JML	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 06/02/20 16:04, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromo-3-chloropropane*	Not detected	0.05		ug/L	1	96-12-8	
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/02/20 16:24, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1	0.18	ug/L	1	76-13-1	
Acetone	5.70	10	0.56	ug/L	1	67-64-1	JB
Carbon disulfide	Not detected	1	0.24	ug/L	1	75-15-0	
Methyl Acetate	Not detected	1	0.25	ug/L	1	79-20-9	
tert-Methyl butyl ether (MTBE)	Not detected	1	0.19	ug/L	1	1634-04-4	
2-Butanone (MEK)	Not detected	10	0.26	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	1	0.50	ug/L	1	75-71-8	
Chloromethane	Not detected	1	0.26	ug/L	1	74-87-3	
Vinyl chloride	Not detected	1	0.31	ug/L	1	75-01-4	
Bromomethane	Not detected	1	0.32	ug/L	1	74-83-9	
Chloroethane	Not detected	1	0.34	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.33	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.27	ug/L	1	75-35-4	
Methylene chloride	Not detected	1	0.29	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1	0.20	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.20	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1	0.26	ug/L	1	156-59-2	
Chloroform	0.22	1	0.20	ug/L	1	67-66-3	J
Bromochloromethane	Not detected	1	0.38	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.28	ug/L	1	71-55-6	
Cyclohexane	Not detected	1	0.29	ug/L	1	110-82-7	
4-Methyl-2-pentanone (MIBK)	Not detected	10	0.14	ug/L	1	108-10-1	
2-Hexanone	Not detected	10	0.29	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.20	ug/L	1	56-23-5	
Benzene	Not detected	1	0.20	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.16	ug/L	1	107-06-2	
Trichloroethene	Not detected	1	0.23	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.20	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.23	ug/L	1	75-27-4	
Methyl cyclohexane	Not detected	1	0.21	ug/L	1	108-87-2	
cis-1,3-Dichloropropene	Not detected	1	0.19	ug/L	1	10061-01-5	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.03 (continued)

Sample Tag: MW-2SB

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/02/20 16:24, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Toluene	Not detected	1	0.25	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.25	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.28	ug/L	1	79-00-5	
Tetrachloroethene	0.26	1	0.20	ug/L	1	127-18-4	J
Dibromochloromethane	Not detected	1	0.24	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.30	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.17	ug/L	1	108-90-7	
Ethylbenzene	Not detected	1	0.26	ug/L	1	100-41-4	
Total Xylenes	Not detected	3	0.66	ug/L	1	1330-20-7	
Styrene	Not detected	1	0.18	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	1	0.25	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.22	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.18	ug/L	1	79-34-5	
1,3-Dichlorobenzene	Not detected	1	0.24	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.23	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.28	ug/L	1	95-50-1	
1,2,4-Trichlorobenzene	0.20	1	0.19	ug/L	1	120-82-1	JB
1,2,3-Trichlorobenzene	Not detected	1	0.20	ug/L	1	87-61-6	

J-Estimated value less than reporting limit, but greater than MDL

B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.04

Sample Tag: MW-2SB MS

Collected Date/Time: 05/21/2020 12:20

Matrix: Groundwater

COC Reference: 134347

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	40ml Glass	HCL	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/20 09:00	JML	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 06/02/20 13:54, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromo-3-chloropropane*	0.12	0.05		ug/L	1	96-12-8	1
1,4-Dioxane*	60	1		ug/L	1	123-91-1	2

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/02/20 14:09, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1,2-Trichloro-1,2,2-trifluoroethane	55	1	0.18	ug/L	1	76-13-1	2
Acetone	54	10	0.56	ug/L	1	67-64-1	B2
Carbon disulfide	53	1	0.24	ug/L	1	75-15-0	B2
Methyl Acetate	45	1	0.25	ug/L	1	79-20-9	2
tert-Methyl butyl ether (MTBE)	53	1	0.19	ug/L	1	1634-04-4	2
2-Butanone (MEK)	52	10	0.26	ug/L	1	78-93-3	2
Dichlorodifluoromethane	60	1	0.50	ug/L	1	75-71-8	2
Chloromethane	55	1	0.26	ug/L	1	74-87-3	2
Vinyl chloride	56	1	0.31	ug/L	1	75-01-4	2
Bromomethane	54	1	0.32	ug/L	1	74-83-9	2
Chloroethane	54	1	0.34	ug/L	1	75-00-3	2
Trichlorofluoromethane	55	1	0.33	ug/L	1	75-69-4	2
1,1-Dichloroethene	54	1	0.27	ug/L	1	75-35-4	2
Methylene chloride	51	1	0.29	ug/L	1	75-09-2	2
trans-1,2-Dichloroethene	53	1	0.20	ug/L	1	156-60-5	2
1,1-Dichloroethane	54	1	0.20	ug/L	1	75-34-3	2
cis-1,2-Dichloroethene	53	1	0.26	ug/L	1	156-59-2	2
Chloroform	55	1	0.20	ug/L	1	67-66-3	2
Bromochloromethane	55	1	0.38	ug/L	1	74-97-5	2
1,1,1-Trichloroethane	55	1	0.28	ug/L	1	71-55-6	2
Cyclohexane	52	1	0.29	ug/L	1	110-82-7	2
4-Methyl-2-pentanone (MIBK)	52	10	0.14	ug/L	1	108-10-1	2
2-Hexanone	52	10	0.29	ug/L	1	591-78-6	2
Carbon tetrachloride	55	1	0.20	ug/L	1	56-23-5	2
Benzene	54	1	0.20	ug/L	1	71-43-2	2
1,2-Dichloroethane	53	1	0.16	ug/L	1	107-06-2	2
Trichloroethene	53	1	0.23	ug/L	1	79-01-6	2
1,2-Dichloropropane	54	1	0.20	ug/L	1	78-87-5	2
Bromodichloromethane	55	1	0.23	ug/L	1	75-27-4	2

1-Spiked at 0.1ug/l.

2-Spiked at 50ug/l.

B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.04 (continued)

Sample Tag: MW-2SB MS

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/02/20 14:09, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Methyl cyclohexane	52	1	0.21	ug/L	1	108-87-2	1
cis-1,3-Dichloropropene	55	1	0.19	ug/L	1	10061-01-5	1
Toluene	53	1	0.25	ug/L	1	108-88-3	1
trans-1,3-Dichloropropene	56	1	0.25	ug/L	1	10061-02-6	1
1,1,2-Trichloroethane	54	1	0.28	ug/L	1	79-00-5	1
Tetrachloroethene	51	1	0.20	ug/L	1	127-18-4	1
Dibromochloromethane	55	1	0.24	ug/L	1	124-48-1	1
1,2-Dibromoethane	54	1	0.30	ug/L	1	106-93-4	1
Chlorobenzene	53	1	0.17	ug/L	1	108-90-7	1
Ethylbenzene	54	1	0.26	ug/L	1	100-41-4	1
Total Xylenes	159	3	0.66	ug/L	1	1330-20-7	1
Styrene	54	1	0.18	ug/L	1	100-42-5	1
Isopropylbenzene	55	1	0.25	ug/L	1	98-82-8	1
Bromoform	55	1	0.22	ug/L	1	75-25-2	1
1,1,2,2-Tetrachloroethane	53	1	0.18	ug/L	1	79-34-5	1
1,3-Dichlorobenzene	53	1	0.24	ug/L	1	541-73-1	1
1,4-Dichlorobenzene	53	1	0.23	ug/L	1	106-46-7	1
1,2-Dichlorobenzene	54	1	0.28	ug/L	1	95-50-1	1
1,2,4-Trichlorobenzene	53	1	0.19	ug/L	1	120-82-1	B1
1,2,3-Trichlorobenzene	54	1	0.20	ug/L	1	87-61-6	B1

1-Spiked at 50ug/L

B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.05

Sample Tag: MW-2SB MSD

Collected Date/Time: 05/21/2020 12:20

Matrix: Groundwater

COC Reference: 134347

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	40ml Glass	HCL	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/20 09:00	JML	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 06/02/20 14:17, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromo-3-chloropropane*	0.12	0.05		ug/L	1	96-12-8	1
1,4-Dioxane*	59	1		ug/L	1	123-91-1	2

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/02/20 14:28, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1,2-Trichloro-1,2,2-trifluoroethane	52	1	0.18	ug/L	1	76-13-1	2
Acetone	54	10	0.56	ug/L	1	67-64-1	B2
Carbon disulfide	51	1	0.24	ug/L	1	75-15-0	B2
Methyl Acetate	44	1	0.25	ug/L	1	79-20-9	2
tert-Methyl butyl ether (MTBE)	52	1	0.19	ug/L	1	1634-04-4	2
2-Butanone (MEK)	51	10	0.26	ug/L	1	78-93-3	2
Dichlorodifluoromethane	57	1	0.50	ug/L	1	75-71-8	2
Chloromethane	54	1	0.26	ug/L	1	74-87-3	2
Vinyl chloride	55	1	0.31	ug/L	1	75-01-4	2
Bromomethane	52	1	0.32	ug/L	1	74-83-9	2
Chloroethane	51	1	0.34	ug/L	1	75-00-3	2
Trichlorofluoromethane	52	1	0.33	ug/L	1	75-69-4	2
1,1-Dichloroethene	52	1	0.27	ug/L	1	75-35-4	2
Methylene chloride	50	1	0.29	ug/L	1	75-09-2	2
trans-1,2-Dichloroethene	51	1	0.20	ug/L	1	156-60-5	2
1,1-Dichloroethane	52	1	0.20	ug/L	1	75-34-3	2
cis-1,2-Dichloroethene	52	1	0.26	ug/L	1	156-59-2	2
Chloroform	53	1	0.20	ug/L	1	67-66-3	2
Bromochloromethane	54	1	0.38	ug/L	1	74-97-5	2
1,1,1-Trichloroethane	53	1	0.28	ug/L	1	71-55-6	2
Cyclohexane	50	1	0.29	ug/L	1	110-82-7	2
4-Methyl-2-pentanone (MIBK)	51	10	0.14	ug/L	1	108-10-1	2
2-Hexanone	52	10	0.29	ug/L	1	591-78-6	2
Carbon tetrachloride	52	1	0.20	ug/L	1	56-23-5	2
Benzene	52	1	0.20	ug/L	1	71-43-2	2
1,2-Dichloroethane	51	1	0.16	ug/L	1	107-06-2	2
Trichloroethene	51	1	0.23	ug/L	1	79-01-6	2
1,2-Dichloropropane	53	1	0.20	ug/L	1	78-87-5	2
Bromodichloromethane	54	1	0.23	ug/L	1	75-27-4	2

1-Spiked at 0.1ug/l.

2-Spiked at 50ug/l.

B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.05 (continued)

Sample Tag: MW-2SB MSD

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/02/20 14:28, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Methyl cyclohexane	49	1	0.21	ug/L	1	108-87-2	1
cis-1,3-Dichloropropene	54	1	0.19	ug/L	1	10061-01-5	1
Toluene	52	1	0.25	ug/L	1	108-88-3	1
trans-1,3-Dichloropropene	55	1	0.25	ug/L	1	10061-02-6	1
1,1,2-Trichloroethane	53	1	0.28	ug/L	1	79-00-5	1
Tetrachloroethene	49	1	0.20	ug/L	1	127-18-4	1
Dibromochloromethane	55	1	0.24	ug/L	1	124-48-1	1
1,2-Dibromoethane	53	1	0.30	ug/L	1	106-93-4	1
Chlorobenzene	52	1	0.17	ug/L	1	108-90-7	1
Ethylbenzene	52	1	0.26	ug/L	1	100-41-4	1
Total Xylenes	153	3	0.66	ug/L	1	1330-20-7	1
Styrene	52	1	0.18	ug/L	1	100-42-5	1
Isopropylbenzene	52	1	0.25	ug/L	1	98-82-8	1
Bromoform	55	1	0.22	ug/L	1	75-25-2	1
1,1,2,2-Tetrachloroethane	52	1	0.18	ug/L	1	79-34-5	1
1,3-Dichlorobenzene	51	1	0.24	ug/L	1	541-73-1	1
1,4-Dichlorobenzene	50	1	0.23	ug/L	1	106-46-7	1
1,2-Dichlorobenzene	52	1	0.28	ug/L	1	95-50-1	1
1,2,4-Trichlorobenzene	51	1	0.19	ug/L	1	120-82-1	B1
1,2,3-Trichlorobenzene	52	1	0.20	ug/L	1	87-61-6	B1

1-Spiked at 50ug/L

B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.06

Sample Tag: MW-2DB

Collected Date/Time: 05/21/2020 11:50

Matrix: Groundwater

COC Reference: 134347

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/20 09:00	JML	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 06/02/20 17:10, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromo-3-chloropropane*	Not detected	0.05		ug/L	1	96-12-8	
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/02/20 17:03, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1	0.18	ug/L	1	76-13-1	
Acetone	3.13	10	0.56	ug/L	1	67-64-1	JB
Carbon disulfide	Not detected	1	0.24	ug/L	1	75-15-0	
Methyl Acetate	Not detected	1	0.25	ug/L	1	79-20-9	
tert-Methyl butyl ether (MTBE)	Not detected	1	0.19	ug/L	1	1634-04-4	
2-Butanone (MEK)	Not detected	10	0.26	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	1	0.50	ug/L	1	75-71-8	
Chloromethane	Not detected	1	0.26	ug/L	1	74-87-3	
Vinyl chloride	Not detected	1	0.31	ug/L	1	75-01-4	
Bromomethane	Not detected	1	0.32	ug/L	1	74-83-9	
Chloroethane	Not detected	1	0.34	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.33	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.27	ug/L	1	75-35-4	
Methylene chloride	Not detected	1	0.29	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1	0.20	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.20	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1	0.26	ug/L	1	156-59-2	
Chloroform	Not detected	1	0.20	ug/L	1	67-66-3	
Bromochloromethane	Not detected	1	0.38	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.28	ug/L	1	71-55-6	
Cyclohexane	Not detected	1	0.29	ug/L	1	110-82-7	
4-Methyl-2-pentanone (MIBK)	Not detected	10	0.14	ug/L	1	108-10-1	
2-Hexanone	Not detected	10	0.29	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.20	ug/L	1	56-23-5	
Benzene	Not detected	1	0.20	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.16	ug/L	1	107-06-2	
Trichloroethene	Not detected	1	0.23	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.20	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.23	ug/L	1	75-27-4	
Methyl cyclohexane	Not detected	1	0.21	ug/L	1	108-87-2	
cis-1,3-Dichloropropene	Not detected	1	0.19	ug/L	1	10061-01-5	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.06 (continued)

Sample Tag: MW-2DB

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/02/20 17:03, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Toluene	Not detected	1	0.25	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.25	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.28	ug/L	1	79-00-5	
Tetrachloroethene	4	1	0.20	ug/L	1	127-18-4	
Dibromochloromethane	Not detected	1	0.24	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.30	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.17	ug/L	1	108-90-7	
Ethylbenzene	Not detected	1	0.26	ug/L	1	100-41-4	
Total Xylenes	Not detected	3	0.66	ug/L	1	1330-20-7	
Styrene	Not detected	1	0.18	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	1	0.25	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.22	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.18	ug/L	1	79-34-5	
1,3-Dichlorobenzene	Not detected	1	0.24	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.23	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.28	ug/L	1	95-50-1	
1,2,4-Trichlorobenzene	Not detected	1	0.19	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	1	0.20	ug/L	1	87-61-6	



Analytical Laboratory Report

Lab Sample ID: S14189.07

Sample Tag: MW-4S

Collected Date/Time: 05/21/2020 14:35

Matrix: Groundwater

COC Reference: 134347

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/20 09:00	JML	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 06/02/20 17:32, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromo-3-chloropropane*	Not detected	0.05		ug/L	1	96-12-8	
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/03/20 17:39, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	5	0.92	ug/L	5	76-13-1	Y
Acetone	5.0	50	2.8	ug/L	5	67-64-1	JBY
Carbon disulfide	Not detected	5	1.2	ug/L	5	75-15-0	Y
Methyl Acetate	Not detected	5	1.2	ug/L	5	79-20-9	Y
tert-Methyl butyl ether (MTBE)	Not detected	5	0.95	ug/L	5	1634-04-4	Y
2-Butanone (MEK)	Not detected	50	1.3	ug/L	5	78-93-3	Y
Dichlorodifluoromethane	Not detected	5	2.5	ug/L	5	75-71-8	Y
Chloromethane	Not detected	5	1.3	ug/L	5	74-87-3	Y
Vinyl chloride	Not detected	5	1.5	ug/L	5	75-01-4	Y
Bromomethane	Not detected	5	1.6	ug/L	5	74-83-9	Y
Chloroethane	Not detected	5	1.7	ug/L	5	75-00-3	Y
Trichlorofluoromethane	Not detected	5	1.6	ug/L	5	75-69-4	Y
1,1-Dichloroethene	Not detected	5	1.3	ug/L	5	75-35-4	Y
Methylene chloride	Not detected	5	1.4	ug/L	5	75-09-2	Y
trans-1,2-Dichloroethene	Not detected	5	0.99	ug/L	5	156-60-5	Y
1,1-Dichloroethane	Not detected	5	1.0	ug/L	5	75-34-3	Y
cis-1,2-Dichloroethene	Not detected	5	1.3	ug/L	5	156-59-2	Y
Chloroform	Not detected	5	1.0	ug/L	5	67-66-3	Y
Bromochloromethane	Not detected	5	1.9	ug/L	5	74-97-5	Y
1,1,1-Trichloroethane	Not detected	5	1.4	ug/L	5	71-55-6	Y
Cyclohexane	Not detected	5	1.4	ug/L	5	110-82-7	Y
4-Methyl-2-pentanone (MIBK)	Not detected	50	0.71	ug/L	5	108-10-1	Y
2-Hexanone	Not detected	50	1.4	ug/L	5	591-78-6	Y
Carbon tetrachloride	Not detected	5	0.98	ug/L	5	56-23-5	Y
Benzene	Not detected	5	1.00	ug/L	5	71-43-2	Y
1,2-Dichloroethane	Not detected	5	0.78	ug/L	5	107-06-2	Y
Trichloroethene	Not detected	5	1.2	ug/L	5	79-01-6	Y
1,2-Dichloropropane	Not detected	5	1.0	ug/L	5	78-87-5	Y
Bromodichloromethane	Not detected	5	1.1	ug/L	5	75-27-4	Y
Methyl cyclohexane	Not detected	5	1.0	ug/L	5	108-87-2	Y

Y-Elevated reporting limit due to high target concentration

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.07 (continued)

Sample Tag: MW-4S

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/03/20 17:39, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,3-Dichloropropene	Not detected	5	0.97	ug/L	5	10061-01-5	Y
Toluene	Not detected	5	1.2	ug/L	5	108-88-3	Y
trans-1,3-Dichloropropene	Not detected	5	1.3	ug/L	5	10061-02-6	Y
1,1,2-Trichloroethane	Not detected	5	1.4	ug/L	5	79-00-5	Y
Tetrachloroethene	387	5	1.0	ug/L	5	127-18-4	Y
Dibromochloromethane	Not detected	5	1.2	ug/L	5	124-48-1	Y
1,2-Dibromoethane	Not detected	5	1.5	ug/L	5	106-93-4	Y
Chlorobenzene	Not detected	5	0.84	ug/L	5	108-90-7	Y
Ethylbenzene	Not detected	5	1.3	ug/L	5	100-41-4	Y
Total Xylenes	Not detected	20	3.3	ug/L	5	1330-20-7	Y
Styrene	Not detected	5	0.89	ug/L	5	100-42-5	Y
Isopropylbenzene	Not detected	5	1.2	ug/L	5	98-82-8	Y
Bromoform	Not detected	5	1.1	ug/L	5	75-25-2	Y
1,1,2,2-Tetrachloroethane	Not detected	5	0.90	ug/L	5	79-34-5	Y
1,3-Dichlorobenzene	Not detected	5	1.2	ug/L	5	541-73-1	Y
1,4-Dichlorobenzene	Not detected	5	1.1	ug/L	5	106-46-7	Y
1,2-Dichlorobenzene	Not detected	5	1.4	ug/L	5	95-50-1	Y
1,2,4-Trichlorobenzene	Not detected	5	0.96	ug/L	5	120-82-1	Y
1,2,3-Trichlorobenzene	Not detected	5	1.0	ug/L	5	87-61-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S14189.08

Sample Tag: MW-4D

Collected Date/Time: 05/21/2020 14:20

Matrix: Groundwater

COC Reference: 134347

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/20 09:00	JML	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 06/02/20 17:55, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromo-3-chloropropane*	Not detected	0.05		ug/L	1	96-12-8	
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/02/20 20:55, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1	0.18	ug/L	1	76-13-1	
Acetone	3.09	10	0.56	ug/L	1	67-64-1	JB
Carbon disulfide	Not detected	1	0.24	ug/L	1	75-15-0	
Methyl Acetate	Not detected	1	0.25	ug/L	1	79-20-9	
tert-Methyl butyl ether (MTBE)	Not detected	1	0.19	ug/L	1	1634-04-4	
2-Butanone (MEK)	Not detected	10	0.26	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	1	0.50	ug/L	1	75-71-8	
Chloromethane	Not detected	1	0.26	ug/L	1	74-87-3	
Vinyl chloride	Not detected	1	0.31	ug/L	1	75-01-4	
Bromomethane	Not detected	1	0.32	ug/L	1	74-83-9	
Chloroethane	Not detected	1	0.34	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.33	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.27	ug/L	1	75-35-4	
Methylene chloride	Not detected	1	0.29	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1	0.20	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.20	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1	0.26	ug/L	1	156-59-2	
Chloroform	Not detected	1	0.20	ug/L	1	67-66-3	
Bromochloromethane	Not detected	1	0.38	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.28	ug/L	1	71-55-6	
Cyclohexane	Not detected	1	0.29	ug/L	1	110-82-7	
4-Methyl-2-pentanone (MIBK)	Not detected	10	0.14	ug/L	1	108-10-1	
2-Hexanone	Not detected	10	0.29	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.20	ug/L	1	56-23-5	
Benzene	Not detected	1	0.20	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.16	ug/L	1	107-06-2	
Trichloroethene	Not detected	1	0.23	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.20	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.23	ug/L	1	75-27-4	
Methyl cyclohexane	Not detected	1	0.21	ug/L	1	108-87-2	
cis-1,3-Dichloropropene	Not detected	1	0.19	ug/L	1	10061-01-5	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.08 (continued)

Sample Tag: MW-4D

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/02/20 20:55, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Toluene	Not detected	1	0.25	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.25	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.28	ug/L	1	79-00-5	
Tetrachloroethene	82	1	0.20	ug/L	1	127-18-4	
Dibromochloromethane	Not detected	1	0.24	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.30	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.17	ug/L	1	108-90-7	
Ethylbenzene	Not detected	1	0.26	ug/L	1	100-41-4	
Total Xylenes	Not detected	3	0.66	ug/L	1	1330-20-7	
Styrene	Not detected	1	0.18	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	1	0.25	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.22	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.18	ug/L	1	79-34-5	
1,3-Dichlorobenzene	Not detected	1	0.24	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.23	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.28	ug/L	1	95-50-1	
1,2,4-Trichlorobenzene	Not detected	1	0.19	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	1	0.20	ug/L	1	87-61-6	



Analytical Laboratory Report

Lab Sample ID: S14189.09

Sample Tag: MW-5

Collected Date/Time: 05/21/2020 13:35

Matrix: Groundwater

COC Reference: 134347

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/20 09:00	JML	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 06/02/20 18:17, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromo-3-chloropropane*	Not detected	0.05		ug/L	1	96-12-8	
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/03/20 15:23, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1	0.18	ug/L	1	76-13-1	
Acetone	3.37	10	0.56	ug/L	1	67-64-1	JB
Carbon disulfide	Not detected	1	0.24	ug/L	1	75-15-0	
Methyl Acetate	Not detected	1	0.25	ug/L	1	79-20-9	
tert-Methyl butyl ether (MTBE)	Not detected	1	0.19	ug/L	1	1634-04-4	
2-Butanone (MEK)	Not detected	10	0.26	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	1	0.50	ug/L	1	75-71-8	
Chloromethane	Not detected	1	0.26	ug/L	1	74-87-3	
Vinyl chloride	Not detected	1	0.31	ug/L	1	75-01-4	
Bromomethane	Not detected	1	0.32	ug/L	1	74-83-9	
Chloroethane	Not detected	1	0.34	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.33	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.27	ug/L	1	75-35-4	
Methylene chloride	Not detected	1	0.29	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1	0.20	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.20	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1	0.26	ug/L	1	156-59-2	
Chloroform	Not detected	1	0.20	ug/L	1	67-66-3	
Bromochloromethane	Not detected	1	0.38	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.28	ug/L	1	71-55-6	
Cyclohexane	Not detected	1	0.29	ug/L	1	110-82-7	
4-Methyl-2-pentanone (MIBK)	Not detected	10	0.14	ug/L	1	108-10-1	
2-Hexanone	Not detected	10	0.29	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.20	ug/L	1	56-23-5	
Benzene	Not detected	1	0.20	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.16	ug/L	1	107-06-2	
Trichloroethene	Not detected	1	0.23	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.20	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.23	ug/L	1	75-27-4	
Methyl cyclohexane	Not detected	1	0.21	ug/L	1	108-87-2	
cis-1,3-Dichloropropene	Not detected	1	0.19	ug/L	1	10061-01-5	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.09 (continued)

Sample Tag: MW-5

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/03/20 15:23, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Toluene	Not detected	1	0.25	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.25	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.28	ug/L	1	79-00-5	
Tetrachloroethene	2	1	0.20	ug/L	1	127-18-4	
Dibromochloromethane	Not detected	1	0.24	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.30	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.17	ug/L	1	108-90-7	
Ethylbenzene	Not detected	1	0.26	ug/L	1	100-41-4	
Total Xylenes	Not detected	3	0.66	ug/L	1	1330-20-7	
Styrene	Not detected	1	0.18	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	1	0.25	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.22	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.18	ug/L	1	79-34-5	
1,3-Dichlorobenzene	Not detected	1	0.24	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.23	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.28	ug/L	1	95-50-1	
1,2,4-Trichlorobenzene	Not detected	1	0.19	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	1	0.20	ug/L	1	87-61-6	



Analytical Laboratory Report

Lab Sample ID: S14189.10

Sample Tag: MW-5SB

Collected Date/Time: 05/21/2020 13:25

Matrix: Groundwater

COC Reference: 134347

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/20 09:00	JML	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 06/02/20 18:39, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromo-3-chloropropane*	Not detected	0.05		ug/L	1	96-12-8	
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/02/20 18:01, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1	0.18	ug/L	1	76-13-1	
Acetone	3.51	10	0.56	ug/L	1	67-64-1	JB
Carbon disulfide	Not detected	1	0.24	ug/L	1	75-15-0	
Methyl Acetate	Not detected	1	0.25	ug/L	1	79-20-9	
tert-Methyl butyl ether (MTBE)	Not detected	1	0.19	ug/L	1	1634-04-4	
2-Butanone (MEK)	Not detected	10	0.26	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	1	0.50	ug/L	1	75-71-8	
Chloromethane	0.55	1	0.26	ug/L	1	74-87-3	J
Vinyl chloride	Not detected	1	0.31	ug/L	1	75-01-4	
Bromomethane	Not detected	1	0.32	ug/L	1	74-83-9	
Chloroethane	Not detected	1	0.34	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.33	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.27	ug/L	1	75-35-4	
Methylene chloride	Not detected	1	0.29	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1	0.20	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.20	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	0.42	1	0.26	ug/L	1	156-59-2	J
Chloroform	Not detected	1	0.20	ug/L	1	67-66-3	
Bromochloromethane	Not detected	1	0.38	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.28	ug/L	1	71-55-6	
Cyclohexane	Not detected	1	0.29	ug/L	1	110-82-7	
4-Methyl-2-pentanone (MIBK)	Not detected	10	0.14	ug/L	1	108-10-1	
2-Hexanone	Not detected	10	0.29	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.20	ug/L	1	56-23-5	
Benzene	Not detected	1	0.20	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.16	ug/L	1	107-06-2	
Trichloroethene	3	1	0.23	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.20	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.23	ug/L	1	75-27-4	
Methyl cyclohexane	Not detected	1	0.21	ug/L	1	108-87-2	
cis-1,3-Dichloropropene	Not detected	1	0.19	ug/L	1	10061-01-5	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.10 (continued)

Sample Tag: MW-5SB

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/02/20 18:01, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Toluene	Not detected	1	0.25	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.25	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.28	ug/L	1	79-00-5	
Tetrachloroethene	3	1	0.20	ug/L	1	127-18-4	
Dibromochloromethane	Not detected	1	0.24	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.30	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.17	ug/L	1	108-90-7	
Ethylbenzene	Not detected	1	0.26	ug/L	1	100-41-4	
Total Xylenes	Not detected	3	0.66	ug/L	1	1330-20-7	
Styrene	Not detected	1	0.18	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	1	0.25	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.22	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.18	ug/L	1	79-34-5	
1,3-Dichlorobenzene	Not detected	1	0.24	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.23	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.28	ug/L	1	95-50-1	
1,2,4-Trichlorobenzene	Not detected	1	0.19	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	1	0.20	ug/L	1	87-61-6	



Analytical Laboratory Report

Lab Sample ID: S14189.11

Sample Tag: MW-5DB

Collected Date/Time: 05/21/2020 13:10

Matrix: Groundwater

COC Reference: 134347

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/20 09:00	JML	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 06/02/20 19:23, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromo-3-chloropropane*	Not detected	0.05		ug/L	1	96-12-8	
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/03/20 17:00, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1	0.18	ug/L	1	76-13-1	
Acetone	3.21	10	0.56	ug/L	1	67-64-1	JB
Carbon disulfide	Not detected	1	0.24	ug/L	1	75-15-0	
Methyl Acetate	Not detected	1	0.25	ug/L	1	79-20-9	
tert-Methyl butyl ether (MTBE)	Not detected	1	0.19	ug/L	1	1634-04-4	
2-Butanone (MEK)	Not detected	10	0.26	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	1	0.50	ug/L	1	75-71-8	
Chloromethane	Not detected	1	0.26	ug/L	1	74-87-3	
Vinyl chloride	0.69	1	0.31	ug/L	1	75-01-4	J
Bromomethane	Not detected	1	0.32	ug/L	1	74-83-9	
Chloroethane	Not detected	1	0.34	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.33	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.27	ug/L	1	75-35-4	
Methylene chloride	Not detected	1	0.29	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1	0.20	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.20	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1	0.26	ug/L	1	156-59-2	
Chloroform	0.27	1	0.20	ug/L	1	67-66-3	J
Bromochloromethane	Not detected	1	0.38	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.28	ug/L	1	71-55-6	
Cyclohexane	Not detected	1	0.29	ug/L	1	110-82-7	
4-Methyl-2-pentanone (MIBK)	Not detected	10	0.14	ug/L	1	108-10-1	
2-Hexanone	Not detected	10	0.29	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.20	ug/L	1	56-23-5	
Benzene	Not detected	1	0.20	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.16	ug/L	1	107-06-2	
Trichloroethene	Not detected	1	0.23	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.20	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.23	ug/L	1	75-27-4	
Methyl cyclohexane	Not detected	1	0.21	ug/L	1	108-87-2	
cis-1,3-Dichloropropene	Not detected	1	0.19	ug/L	1	10061-01-5	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.11 (continued)

Sample Tag: MW-5DB

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/03/20 17:00, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Toluene	Not detected	1	0.25	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.25	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.28	ug/L	1	79-00-5	
Tetrachloroethene	0.21	1	0.20	ug/L	1	127-18-4	J
Dibromochloromethane	Not detected	1	0.24	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.30	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.17	ug/L	1	108-90-7	
Ethylbenzene	Not detected	1	0.26	ug/L	1	100-41-4	
Total Xylenes	Not detected	3	0.66	ug/L	1	1330-20-7	
Styrene	Not detected	1	0.18	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	1	0.25	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.22	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.18	ug/L	1	79-34-5	
1,3-Dichlorobenzene	Not detected	1	0.24	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.23	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.28	ug/L	1	95-50-1	
1,2,4-Trichlorobenzene	Not detected	1	0.19	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	1	0.20	ug/L	1	87-61-6	

J-Estimated value less than reporting limit, but greater than MDL



Analytical Laboratory Report

Lab Sample ID: S14189.12

Sample Tag: MW-7

Collected Date/Time: 05/21/2020 10:20

Matrix: Groundwater

COC Reference: 134347

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/20 09:00	JML	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 06/02/20 19:45, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromo-3-chloropropane*	Not detected	0.05		ug/L	1	96-12-8	
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/02/20 18:39, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1	0.18	ug/L	1	76-13-1	
Acetone	2.83	10	0.56	ug/L	1	67-64-1	JB
Carbon disulfide	Not detected	1	0.24	ug/L	1	75-15-0	
Methyl Acetate	Not detected	1	0.25	ug/L	1	79-20-9	
tert-Methyl butyl ether (MTBE)	Not detected	1	0.19	ug/L	1	1634-04-4	
2-Butanone (MEK)	Not detected	10	0.26	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	1	0.50	ug/L	1	75-71-8	
Chloromethane	Not detected	1	0.26	ug/L	1	74-87-3	
Vinyl chloride	Not detected	1	0.31	ug/L	1	75-01-4	
Bromomethane	Not detected	1	0.32	ug/L	1	74-83-9	
Chloroethane	Not detected	1	0.34	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.33	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.27	ug/L	1	75-35-4	
Methylene chloride	Not detected	1	0.29	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1	0.20	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.20	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1	0.26	ug/L	1	156-59-2	
Chloroform	0.24	1	0.20	ug/L	1	67-66-3	J
Bromochloromethane	Not detected	1	0.38	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.28	ug/L	1	71-55-6	
Cyclohexane	Not detected	1	0.29	ug/L	1	110-82-7	
4-Methyl-2-pentanone (MIBK)	Not detected	10	0.14	ug/L	1	108-10-1	
2-Hexanone	Not detected	10	0.29	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.20	ug/L	1	56-23-5	
Benzene	Not detected	1	0.20	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.16	ug/L	1	107-06-2	
Trichloroethene	Not detected	1	0.23	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.20	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.23	ug/L	1	75-27-4	
Methyl cyclohexane	Not detected	1	0.21	ug/L	1	108-87-2	
cis-1,3-Dichloropropene	Not detected	1	0.19	ug/L	1	10061-01-5	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.12 (continued)

Sample Tag: MW-7

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/02/20 18:39, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Toluene	Not detected	1	0.25	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.25	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.28	ug/L	1	79-00-5	
Tetrachloroethene	14	1	0.20	ug/L	1	127-18-4	
Dibromochloromethane	Not detected	1	0.24	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.30	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.17	ug/L	1	108-90-7	
Ethylbenzene	Not detected	1	0.26	ug/L	1	100-41-4	
Total Xylenes	Not detected	3	0.66	ug/L	1	1330-20-7	
Styrene	Not detected	1	0.18	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	1	0.25	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.22	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.18	ug/L	1	79-34-5	
1,3-Dichlorobenzene	Not detected	1	0.24	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.23	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.28	ug/L	1	95-50-1	
1,2,4-Trichlorobenzene	Not detected	1	0.19	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	1	0.20	ug/L	1	87-61-6	



Analytical Laboratory Report

Lab Sample ID: S14189.13

Sample Tag: MW-7SB

Collected Date/Time: 05/21/2020 10:30

Matrix: Groundwater

COC Reference: 134347

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/20 09:00	JML	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 06/02/20 20:08, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromo-3-chloropropane*	Not detected	0.05		ug/L	1	96-12-8	
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/03/20 15:43, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1	0.18	ug/L	1	76-13-1	
Acetone	2.61	10	0.56	ug/L	1	67-64-1	JB
Carbon disulfide	Not detected	1	0.24	ug/L	1	75-15-0	
Methyl Acetate	Not detected	1	0.25	ug/L	1	79-20-9	
tert-Methyl butyl ether (MTBE)	Not detected	1	0.19	ug/L	1	1634-04-4	
2-Butanone (MEK)	Not detected	10	0.26	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	1	0.50	ug/L	1	75-71-8	
Chloromethane	Not detected	1	0.26	ug/L	1	74-87-3	
Vinyl chloride	Not detected	1	0.31	ug/L	1	75-01-4	
Bromomethane	Not detected	1	0.32	ug/L	1	74-83-9	
Chloroethane	Not detected	1	0.34	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.33	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.27	ug/L	1	75-35-4	
Methylene chloride	Not detected	1	0.29	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1	0.20	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.20	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	6	1	0.26	ug/L	1	156-59-2	
Chloroform	Not detected	1	0.20	ug/L	1	67-66-3	
Bromochloromethane	Not detected	1	0.38	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.28	ug/L	1	71-55-6	
Cyclohexane	Not detected	1	0.29	ug/L	1	110-82-7	
4-Methyl-2-pentanone (MIBK)	Not detected	10	0.14	ug/L	1	108-10-1	
2-Hexanone	Not detected	10	0.29	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.20	ug/L	1	56-23-5	
Benzene	Not detected	1	0.20	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.16	ug/L	1	107-06-2	
Trichloroethene	Not detected	1	0.23	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.20	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.23	ug/L	1	75-27-4	
Methyl cyclohexane	Not detected	1	0.21	ug/L	1	108-87-2	
cis-1,3-Dichloropropene	Not detected	1	0.19	ug/L	1	10061-01-5	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.13 (continued)

Sample Tag: MW-7SB

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/03/20 15:43, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Toluene	Not detected	1	0.25	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.25	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.28	ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1	0.20	ug/L	1	127-18-4	
Dibromochloromethane	Not detected	1	0.24	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.30	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.17	ug/L	1	108-90-7	
Ethylbenzene	Not detected	1	0.26	ug/L	1	100-41-4	
Total Xylenes	Not detected	3	0.66	ug/L	1	1330-20-7	
Styrene	Not detected	1	0.18	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	1	0.25	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.22	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.18	ug/L	1	79-34-5	
1,3-Dichlorobenzene	Not detected	1	0.24	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.23	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.28	ug/L	1	95-50-1	
1,2,4-Trichlorobenzene	Not detected	1	0.19	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	1	0.20	ug/L	1	87-61-6	



Analytical Laboratory Report

Lab Sample ID: S14189.14

Sample Tag: MW-8

Collected Date/Time: 05/21/2020 10:55

Matrix: Groundwater

COC Reference: 134347

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/20 09:00	JML	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 06/02/20 20:30, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromo-3-chloropropane*	Not detected	0.05		ug/L	1	96-12-8	
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/02/20 21:15, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1	0.18	ug/L	1	76-13-1	
Acetone	2.92	10	0.56	ug/L	1	67-64-1	JB
Carbon disulfide	Not detected	1	0.24	ug/L	1	75-15-0	
Methyl Acetate	Not detected	1	0.25	ug/L	1	79-20-9	
tert-Methyl butyl ether (MTBE)	Not detected	1	0.19	ug/L	1	1634-04-4	
2-Butanone (MEK)	Not detected	10	0.26	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	1	0.50	ug/L	1	75-71-8	
Chloromethane	Not detected	1	0.26	ug/L	1	74-87-3	
Vinyl chloride	8	1	0.31	ug/L	1	75-01-4	
Bromomethane	Not detected	1	0.32	ug/L	1	74-83-9	
Chloroethane	Not detected	1	0.34	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.33	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.27	ug/L	1	75-35-4	
Methylene chloride	Not detected	1	0.29	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	0.21	1	0.20	ug/L	1	156-60-5	J
1,1-Dichloroethane	Not detected	1	0.20	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	2	1	0.26	ug/L	1	156-59-2	
Chloroform	Not detected	1	0.20	ug/L	1	67-66-3	
Bromochloromethane	Not detected	1	0.38	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.28	ug/L	1	71-55-6	
Cyclohexane	Not detected	1	0.29	ug/L	1	110-82-7	
4-Methyl-2-pentanone (MIBK)	Not detected	10	0.14	ug/L	1	108-10-1	
2-Hexanone	Not detected	10	0.29	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.20	ug/L	1	56-23-5	
Benzene	Not detected	1	0.20	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.16	ug/L	1	107-06-2	
Trichloroethene	0.57	1	0.23	ug/L	1	79-01-6	J
1,2-Dichloropropane	Not detected	1	0.20	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.23	ug/L	1	75-27-4	
Methyl cyclohexane	Not detected	1	0.21	ug/L	1	108-87-2	
cis-1,3-Dichloropropene	Not detected	1	0.19	ug/L	1	10061-01-5	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.14 (continued)

Sample Tag: MW-8

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/02/20 21:15, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Toluene	Not detected	1	0.25	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.25	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.28	ug/L	1	79-00-5	
Tetrachloroethene	3	1	0.20	ug/L	1	127-18-4	
Dibromochloromethane	Not detected	1	0.24	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.30	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.17	ug/L	1	108-90-7	
Ethylbenzene	Not detected	1	0.26	ug/L	1	100-41-4	
Total Xylenes	Not detected	3	0.66	ug/L	1	1330-20-7	
Styrene	Not detected	1	0.18	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	1	0.25	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.22	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.18	ug/L	1	79-34-5	
1,3-Dichlorobenzene	Not detected	1	0.24	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.23	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.28	ug/L	1	95-50-1	
1,2,4-Trichlorobenzene	Not detected	1	0.19	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	1	0.20	ug/L	1	87-61-6	



Analytical Laboratory Report

Lab Sample ID: S14189.15

Sample Tag: MW-8SB

Collected Date/Time: 05/21/2020 11:05

Matrix: Groundwater

COC Reference: 134344

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/20 09:00	JML	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 06/02/20 19:01, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromo-3-chloropropane*	Not detected	0.05		ug/L	1	96-12-8	
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/03/20 17:58, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	5	0.92	ug/L	5	76-13-1	Y
Acetone	5.2	50	2.8	ug/L	5	67-64-1	JBY
Carbon disulfide	Not detected	5	1.2	ug/L	5	75-15-0	Y
Methyl Acetate	Not detected	5	1.2	ug/L	5	79-20-9	Y
tert-Methyl butyl ether (MTBE)	Not detected	5	0.95	ug/L	5	1634-04-4	Y
2-Butanone (MEK)	Not detected	50	1.3	ug/L	5	78-93-3	Y
Dichlorodifluoromethane	Not detected	5	2.5	ug/L	5	75-71-8	Y
Chloromethane	Not detected	5	1.3	ug/L	5	74-87-3	Y
Vinyl chloride	Not detected	5	1.5	ug/L	5	75-01-4	Y
Bromomethane	Not detected	5	1.6	ug/L	5	74-83-9	Y
Chloroethane	Not detected	5	1.7	ug/L	5	75-00-3	Y
Trichlorofluoromethane	Not detected	5	1.6	ug/L	5	75-69-4	Y
1,1-Dichloroethene	Not detected	5	1.3	ug/L	5	75-35-4	Y
Methylene chloride	Not detected	5	1.4	ug/L	5	75-09-2	Y
trans-1,2-Dichloroethene	Not detected	5	0.99	ug/L	5	156-60-5	Y
1,1-Dichloroethane	Not detected	5	1.0	ug/L	5	75-34-3	Y
cis-1,2-Dichloroethene	4.4	5	1.3	ug/L	5	156-59-2	JY
Chloroform	Not detected	5	1.0	ug/L	5	67-66-3	Y
Bromochloromethane	Not detected	5	1.9	ug/L	5	74-97-5	Y
1,1,1-Trichloroethane	Not detected	5	1.4	ug/L	5	71-55-6	Y
Cyclohexane	Not detected	5	1.4	ug/L	5	110-82-7	Y
4-Methyl-2-pentanone (MIBK)	Not detected	50	0.71	ug/L	5	108-10-1	Y
2-Hexanone	Not detected	50	1.4	ug/L	5	591-78-6	Y
Carbon tetrachloride	Not detected	5	0.98	ug/L	5	56-23-5	Y
Benzene	Not detected	5	1.00	ug/L	5	71-43-2	Y
1,2-Dichloroethane	Not detected	5	0.78	ug/L	5	107-06-2	Y
Trichloroethene	10	5	1.2	ug/L	5	79-01-6	Y
1,2-Dichloropropane	Not detected	5	1.0	ug/L	5	78-87-5	Y
Bromodichloromethane	Not detected	5	1.1	ug/L	5	75-27-4	Y
Methyl cyclohexane	Not detected	5	1.0	ug/L	5	108-87-2	Y

Y-Elevated reporting limit due to high target concentration

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.15 (continued)

Sample Tag: MW-8SB

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/03/20 17:58, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,3-Dichloropropene	Not detected	5	0.97	ug/L	5	10061-01-5	Y
Toluene	Not detected	5	1.2	ug/L	5	108-88-3	Y
trans-1,3-Dichloropropene	Not detected	5	1.3	ug/L	5	10061-02-6	Y
1,1,2-Trichloroethane	Not detected	5	1.4	ug/L	5	79-00-5	Y
Tetrachloroethene	212	5	1.0	ug/L	5	127-18-4	Y
Dibromochloromethane	Not detected	5	1.2	ug/L	5	124-48-1	Y
1,2-Dibromoethane	Not detected	5	1.5	ug/L	5	106-93-4	Y
Chlorobenzene	Not detected	5	0.84	ug/L	5	108-90-7	Y
Ethylbenzene	Not detected	5	1.3	ug/L	5	100-41-4	Y
Total Xylenes	Not detected	20	3.3	ug/L	5	1330-20-7	Y
Styrene	Not detected	5	0.89	ug/L	5	100-42-5	Y
Isopropylbenzene	Not detected	5	1.2	ug/L	5	98-82-8	Y
Bromoform	Not detected	5	1.1	ug/L	5	75-25-2	Y
1,1,2,2-Tetrachloroethane	Not detected	5	0.90	ug/L	5	79-34-5	Y
1,3-Dichlorobenzene	Not detected	5	1.2	ug/L	5	541-73-1	Y
1,4-Dichlorobenzene	Not detected	5	1.1	ug/L	5	106-46-7	Y
1,2-Dichlorobenzene	Not detected	5	1.4	ug/L	5	95-50-1	Y
1,2,4-Trichlorobenzene	Not detected	5	0.96	ug/L	5	120-82-1	Y
1,2,3-Trichlorobenzene	Not detected	5	1.0	ug/L	5	87-61-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S14189.16

Sample Tag: MW-9

Collected Date/Time: 05/21/2020 09:45

Matrix: Groundwater

COC Reference: 134344

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/20 09:00	JML	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 06/02/20 20:52, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromo-3-chloropropane*	Not detected	0.05		ug/L	1	96-12-8	
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/03/20 16:02, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1	0.18	ug/L	1	76-13-1	
Acetone	2.89	10	0.56	ug/L	1	67-64-1	JB
Carbon disulfide	Not detected	1	0.24	ug/L	1	75-15-0	
Methyl Acetate	Not detected	1	0.25	ug/L	1	79-20-9	
tert-Methyl butyl ether (MTBE)	Not detected	1	0.19	ug/L	1	1634-04-4	
2-Butanone (MEK)	Not detected	10	0.26	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	1	0.50	ug/L	1	75-71-8	
Chloromethane	Not detected	1	0.26	ug/L	1	74-87-3	
Vinyl chloride	Not detected	1	0.31	ug/L	1	75-01-4	
Bromomethane	Not detected	1	0.32	ug/L	1	74-83-9	
Chloroethane	Not detected	1	0.34	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.33	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.27	ug/L	1	75-35-4	
Methylene chloride	Not detected	1	0.29	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1	0.20	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.20	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1	0.26	ug/L	1	156-59-2	
Chloroform	Not detected	1	0.20	ug/L	1	67-66-3	
Bromochloromethane	Not detected	1	0.38	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.28	ug/L	1	71-55-6	
Cyclohexane	Not detected	1	0.29	ug/L	1	110-82-7	
4-Methyl-2-pentanone (MIBK)	Not detected	10	0.14	ug/L	1	108-10-1	
2-Hexanone	Not detected	10	0.29	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.20	ug/L	1	56-23-5	
Benzene	Not detected	1	0.20	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.16	ug/L	1	107-06-2	
Trichloroethene	Not detected	1	0.23	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.20	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.23	ug/L	1	75-27-4	
Methyl cyclohexane	Not detected	1	0.21	ug/L	1	108-87-2	
cis-1,3-Dichloropropene	Not detected	1	0.19	ug/L	1	10061-01-5	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.16 (continued)

Sample Tag: MW-9

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/03/20 16:02, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Toluene	Not detected	1	0.25	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.25	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.28	ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1	0.20	ug/L	1	127-18-4	
Dibromochloromethane	Not detected	1	0.24	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.30	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.17	ug/L	1	108-90-7	
Ethylbenzene	Not detected	1	0.26	ug/L	1	100-41-4	
Total Xylenes	Not detected	3	0.66	ug/L	1	1330-20-7	
Styrene	Not detected	1	0.18	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	1	0.25	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.22	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.18	ug/L	1	79-34-5	
1,3-Dichlorobenzene	Not detected	1	0.24	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.23	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.28	ug/L	1	95-50-1	
1,2,4-Trichlorobenzene	Not detected	1	0.19	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	1	0.20	ug/L	1	87-61-6	



Analytical Laboratory Report

Lab Sample ID: S14189.17

Sample Tag: MW-9SB

Collected Date/Time: 05/21/2020 09:35

Matrix: Groundwater

COC Reference: 134344

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/20 09:00	JML	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 06/02/20 21:14, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromo-3-chloropropane*	Not detected	0.05		ug/L	1	96-12-8	
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/03/20 16:21, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1	0.18	ug/L	1	76-13-1	
Acetone	2.14	10	0.56	ug/L	1	67-64-1	JB
Carbon disulfide	Not detected	1	0.24	ug/L	1	75-15-0	
Methyl Acetate	Not detected	1	0.25	ug/L	1	79-20-9	
tert-Methyl butyl ether (MTBE)	Not detected	1	0.19	ug/L	1	1634-04-4	
2-Butanone (MEK)	Not detected	10	0.26	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	1	0.50	ug/L	1	75-71-8	
Chloromethane	Not detected	1	0.26	ug/L	1	74-87-3	
Vinyl chloride	Not detected	1	0.31	ug/L	1	75-01-4	
Bromomethane	Not detected	1	0.32	ug/L	1	74-83-9	
Chloroethane	Not detected	1	0.34	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.33	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.27	ug/L	1	75-35-4	
Methylene chloride	Not detected	1	0.29	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1	0.20	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.20	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1	0.26	ug/L	1	156-59-2	
Chloroform	Not detected	1	0.20	ug/L	1	67-66-3	
Bromochloromethane	Not detected	1	0.38	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.28	ug/L	1	71-55-6	
Cyclohexane	Not detected	1	0.29	ug/L	1	110-82-7	
4-Methyl-2-pentanone (MIBK)	Not detected	10	0.14	ug/L	1	108-10-1	
2-Hexanone	Not detected	10	0.29	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.20	ug/L	1	56-23-5	
Benzene	Not detected	1	0.20	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.16	ug/L	1	107-06-2	
Trichloroethene	Not detected	1	0.23	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.20	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.23	ug/L	1	75-27-4	
Methyl cyclohexane	Not detected	1	0.21	ug/L	1	108-87-2	
cis-1,3-Dichloropropene	Not detected	1	0.19	ug/L	1	10061-01-5	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.17 (continued)

Sample Tag: MW-9SB

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/03/20 16:21, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Toluene	Not detected	1	0.25	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.25	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.28	ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1	0.20	ug/L	1	127-18-4	
Dibromochloromethane	Not detected	1	0.24	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.30	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.17	ug/L	1	108-90-7	
Ethylbenzene	Not detected	1	0.26	ug/L	1	100-41-4	
Total Xylenes	Not detected	3	0.66	ug/L	1	1330-20-7	
Styrene	Not detected	1	0.18	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	1	0.25	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.22	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.18	ug/L	1	79-34-5	
1,3-Dichlorobenzene	Not detected	1	0.24	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.23	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.28	ug/L	1	95-50-1	
1,2,4-Trichlorobenzene	Not detected	1	0.19	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	1	0.20	ug/L	1	87-61-6	



Analytical Laboratory Report

Lab Sample ID: S14189.18

Sample Tag: MW-BD-1

Collected Date/Time: 05/21/2020 00:01

Matrix: Groundwater

COC Reference: 134344

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
3	40ml Glass	HCL	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/20 09:00	JML	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 06/02/20 21:36, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromo-3-chloropropane*	Not detected	0.05		ug/L	1	96-12-8	
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/03/20 16:41, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1	0.18	ug/L	1	76-13-1	
Acetone	5.46	10	0.56	ug/L	1	67-64-1	JB
Carbon disulfide	Not detected	1	0.24	ug/L	1	75-15-0	
Methyl Acetate	Not detected	1	0.25	ug/L	1	79-20-9	
tert-Methyl butyl ether (MTBE)	Not detected	1	0.19	ug/L	1	1634-04-4	
2-Butanone (MEK)	Not detected	10	0.26	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	1	0.50	ug/L	1	75-71-8	
Chloromethane	Not detected	1	0.26	ug/L	1	74-87-3	
Vinyl chloride	Not detected	1	0.31	ug/L	1	75-01-4	
Bromomethane	Not detected	1	0.32	ug/L	1	74-83-9	
Chloroethane	Not detected	1	0.34	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.33	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.27	ug/L	1	75-35-4	
Methylene chloride	Not detected	1	0.29	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1	0.20	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.20	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1	0.26	ug/L	1	156-59-2	
Chloroform	Not detected	1	0.20	ug/L	1	67-66-3	
Bromochloromethane	Not detected	1	0.38	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.28	ug/L	1	71-55-6	
Cyclohexane	Not detected	1	0.29	ug/L	1	110-82-7	
4-Methyl-2-pentanone (MIBK)	Not detected	10	0.14	ug/L	1	108-10-1	
2-Hexanone	Not detected	10	0.29	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.20	ug/L	1	56-23-5	
Benzene	Not detected	1	0.20	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.16	ug/L	1	107-06-2	
Trichloroethene	Not detected	1	0.23	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.20	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.23	ug/L	1	75-27-4	
Methyl cyclohexane	Not detected	1	0.21	ug/L	1	108-87-2	
cis-1,3-Dichloropropene	Not detected	1	0.19	ug/L	1	10061-01-5	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.18 (continued)

Sample Tag: MW-BD-1

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/03/20 16:41, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Toluene	Not detected	1	0.25	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.25	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.28	ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1	0.20	ug/L	1	127-18-4	
Dibromochloromethane	Not detected	1	0.24	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.30	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.17	ug/L	1	108-90-7	
Ethylbenzene	Not detected	1	0.26	ug/L	1	100-41-4	
Total Xylenes	Not detected	3	0.66	ug/L	1	1330-20-7	
Styrene	Not detected	1	0.18	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	1	0.25	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.22	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.18	ug/L	1	79-34-5	
1,3-Dichlorobenzene	Not detected	1	0.24	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.23	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.28	ug/L	1	95-50-1	
1,2,4-Trichlorobenzene	Not detected	1	0.19	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	1	0.20	ug/L	1	87-61-6	



Analytical Laboratory Report

Lab Sample ID: S14189.19

Sample Tag: TB-1

Collected Date/Time: 05/21/2020 00:01

Matrix: Water

COC Reference: 134344

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	40ml Glass	HCL	Yes	2.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	06/03/20 09:00	JML	

Organics - Volatiles

Method: SW8260B - SIM, Run Date: 06/02/20 15:42, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dibromo-3-chloropropane*	Not detected	0.05		ug/L	1	96-12-8	
1,4-Dioxane*	Not detected	1		ug/L	1	123-91-1	

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/02/20 16:05, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1,2-Trichloro-1,2,2-trifluoroethane	Not detected	1	0.18	ug/L	1	76-13-1	
Acetone	3.28	10	0.56	ug/L	1	67-64-1	JB
Carbon disulfide	Not detected	1	0.24	ug/L	1	75-15-0	
Methyl Acetate	Not detected	1	0.25	ug/L	1	79-20-9	
tert-Methyl butyl ether (MTBE)	Not detected	1	0.19	ug/L	1	1634-04-4	
2-Butanone (MEK)	Not detected	10	0.26	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	1	0.50	ug/L	1	75-71-8	
Chloromethane	Not detected	1	0.26	ug/L	1	74-87-3	
Vinyl chloride	Not detected	1	0.31	ug/L	1	75-01-4	
Bromomethane	Not detected	1	0.32	ug/L	1	74-83-9	
Chloroethane	Not detected	1	0.34	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.33	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.27	ug/L	1	75-35-4	
Methylene chloride	Not detected	1	0.29	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1	0.20	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.20	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1	0.26	ug/L	1	156-59-2	
Chloroform	Not detected	1	0.20	ug/L	1	67-66-3	
Bromochloromethane	Not detected	1	0.38	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.28	ug/L	1	71-55-6	
Cyclohexane	Not detected	1	0.29	ug/L	1	110-82-7	
4-Methyl-2-pentanone (MIBK)	Not detected	10	0.14	ug/L	1	108-10-1	
2-Hexanone	Not detected	10	0.29	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.20	ug/L	1	56-23-5	
Benzene	Not detected	1	0.20	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.16	ug/L	1	107-06-2	
Trichloroethene	Not detected	1	0.23	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.20	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.23	ug/L	1	75-27-4	
Methyl cyclohexane	Not detected	1	0.21	ug/L	1	108-87-2	
cis-1,3-Dichloropropene	Not detected	1	0.19	ug/L	1	10061-01-5	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank



Analytical Laboratory Report

Lab Sample ID: S14189.19 (continued)
Sample Tag: TB-1

TCL Volatile Organics 8260, Method: SW5030C/8260C, Run Date: 06/02/20 16:05, Analyst: JGH (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Toluene	Not detected	1	0.25	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.25	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.28	ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1	0.20	ug/L	1	127-18-4	
Dibromochloromethane	Not detected	1	0.24	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.30	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.17	ug/L	1	108-90-7	
Ethylbenzene	Not detected	1	0.26	ug/L	1	100-41-4	
Total Xylenes	Not detected	3	0.66	ug/L	1	1330-20-7	
Styrene	Not detected	1	0.18	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	1	0.25	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.22	ug/L	1	75-25-2	
1,1,1,2-Tetrachloroethane	Not detected	1	0.18	ug/L	1	79-34-5	
1,3-Dichlorobenzene	Not detected	1	0.24	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.23	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.28	ug/L	1	95-50-1	
1,2,4-Trichlorobenzene	0.22	1	0.19	ug/L	1	120-82-1	JB
1,2,3-Trichlorobenzene	Not detected	1	0.20	ug/L	1	87-61-6	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank

Merit Laboratories Login Checklist

Lab Set ID:S14189

Client:OBGNY (O'Brien & Gere Engineers, Inc.)

Project: OHAD - BCP No. C360115

Submitted:05/22/2020 10:30 Login User: SRS

Attention: Mark Randazzo

Address: O'Brien & Gere Engineers
50 Main St, Suite 1060
White Plains, NY 10606

Phone: 781-883-6432

FAX:

Email: mark.randazzo@ramboll.com

Selection	Description	Note
Sample Receiving		
01.	☒ Yes ☐ No ☐ N/A	Samples are received at 4C +/- 2C Thermometer # IR 2.9
02.	☒ Yes ☐ No ☐ N/A	Received on ice/ cooling process begun
03.	☒ Yes ☐ No ☐ N/A	Samples shipped FedEx
04.	☐ Yes ☒ No ☐ N/A	Samples left in 24 hr. drop box
05.	☒ Yes ☐ No ☐ N/A	Are there custody seals/tape or is the drop box locked
Chain of Custody		
06.	☒ Yes ☐ No ☐ N/A	COC adequately filled out
07.	☒ Yes ☐ No ☐ N/A	COC signed and relinquished to the lab
08.	☒ Yes ☐ No ☐ N/A	Sample tag on bottles match COC
09.	☐ Yes ☒ No ☐ N/A	Subcontracting needed? Subcontracted to:
Preservation		
10.	☒ Yes ☐ No ☐ N/A	Do sample have correct chemical preservation
11.	☐ Yes ☐ No ☒ N/A	Completed pH checks on preserved samples? (no VOAs)
12.	☐ Yes ☒ No ☐ N/A	Did any samples need to be preserved in the lab?
Bottle Conditions		
13.	☒ Yes ☐ No ☐ N/A	All bottles intact
14.	☒ Yes ☐ No ☐ N/A	Appropriate analytical bottles are used
15.	☒ Yes ☐ No ☐ N/A	Merit bottles used
16.	☒ Yes ☐ No ☐ N/A	Sufficient sample volume received
17.	☐ Yes ☒ No ☐ N/A	Samples require laboratory filtration
18.	☒ Yes ☐ No ☐ N/A	Samples submitted within holding time
19.	☐ Yes ☒ No ☐ N/A	Do water VOC or TOX bottles contain headspace

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME			Mark A. Randazzo		
COMPANY			Ramboll		
ADDRESS					
50 Main Street, Suite 1007					
CITY			STATE		ZIP CODE
White Plains			NY		10606
PHONE NO.			FAX NO.		P.O. NO.
781-883-6432					12000363
E-MAIL ADDRESS				QUOTE NO.	
Mark.Randazzo@ramboll.com					

CONTACT NAME		☒ SAME	
COMPANY			
ADDRESS			
CITY		STATE	ZIP CODE
PHONE NO.		E-MAIL ADDRESS	

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME OHAD - BCP No. C360115	SAMPLER(S) - PLEASE PRINT/SIGN NAME Mark Kanderzo
TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER _____	
DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☒ EDD ☐ OTHER _____	

Certifications

☐ OHIO VAP ☐ Drinking Water

☐ DoD ☐ NPDES

Project Locations

☐ Detroit ☒ New York

☒ Other QCD

Special Instructions QCD

MATRIX	GW=GROUNDWATER	WW=WASTEWATER	S=SOIL	L=LIQUID	SD=SOLID
CODE:	SL=SLUDGE	DW=DRINKING WATER	O=OIL	WP=WIPE	A=AIR
					W=WASTE

Containers & Preservatives

MERIT LAB NO. FOR LAB USE ONLY	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES
	DATE	TIME			
14189.01	5/21/20	1355	MW-1	GW	3
.02	5/21/20	1235	MW-2	GW	3
.03/04/.05	5/21/20	1220	MW-2SB	GW	3
.06	5/21/20	1150	MW-2DB	GW	3
.07	5/21/20	1435	MW-4S	GW	3
.08	5/21/20	1420	MW-4D	GW	3
.09	5/21/20	1335	MW-5	GW	3
.10	5/21/20	1325	MW-5SB	GW	3
.11	5/21/20	1310	MW-5DB	GW	3
.12	5/21/20	1020	MW-7	GW	3
.13	5/21/20	1030	MW-7SB	GW	3
.14	5/21/20	1055	MW-8	GW	3

HCl
HNO ₃
H ₂ SO ₄
NaOH
MeOH
OTHER

X				
K				
k				
K				
x				
K				
K				
x				
x				
X				
x				
X				

RELINQUISHED BY: SIGNATURE/ORGANIZATION	<i>MMS / Ramboll</i>	Sampler	DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION			5/21/20	1600

RELINQUISHED BY:	Federal Express	DATE	TIME
SIGNATURE/ORGANIZATION		5/24/20	1600
RECEIVED BY:		DATE	TIME
SIGNATURE/ORGANIZATION			

RELINQUISHED BY:		DATE	TIME
SIGNATURE/ORGANIZATION	FedEx	5/22/20	1030
RECEIVED BY:		DATE	TIME
SIGNATURE/ORGANIZATION	Smith	5/22/20	1030

SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	NOTES: TEMP. ON ARRIVAL <u>2.9</u>
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev 5.18.12



Merit
Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 2 OF 2

134344

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME Mark A. Randazzo	
COMPANY Ramboll	
ADDRESS 50 Main St, Suite 1007	
CITY White Plains	STATE NY ZIP CODE 10606
PHONE NO. 781-883-6432	FAX NO. 12000363
E-MAIL ADDRESS mark.randazzo@ramboll.com	

CONTACT NAME X SAME	
COMPANY	
ADDRESS	
CITY	STATE ZIP CODE
PHONE NO.	E-MAIL ADDRESS

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME OHAD - BCP No. 36015	SAMPLER(S) - PLEASE PRINT/SIGN NAME Mark Randazzo
TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER	
DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☒ EDD ☐ OTHER	

MATRIX CODE:	GW=GROUNDWATER SL=SLUDGE	WW=WASTEWATER DW=DRINKING WATER	S=SOIL O=OIL	L=LIQUID WP=WIFE	SD=SOLID A=AIR	W=WASTE
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Containers & Preservatives

MERIT LAB NO. FOR LAB USE ONLY	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives							
	DATE	TIME				NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER	
14189.15	5/21/20	1105	MW-8SB	GW	3		X						X
.16	5/21/20	0945	MW-9	GW	3		X						X
.17	5/21/20	0935	MW-9SB	GW	3		X						X
.18	5/21/20	-	MW-BD-1	GW	2		X						X
.19	5/21/20	-	TB-1	-	2		X						X

Certifications	
☐ OHIO VAP	☐ Drinking Water
☐ DoD	☐ NPDES
Project Locations	
☐ Detroit	☒ New York
☒ Other	QCD
Special Instructions	

RELINQUISHED BY: SIGNATURE/ORGANIZATION THH/Ramboll	SAMPLER A	DATE 5/21/20	TIME 1600
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE	TIME

RELINQUISHED BY: SIGNATURE/ORGANIZATION Fedwa Express	DATE 5/21/20	TIME 1600
RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME

RELINQUISHED BY: SIGNATURE/ORGANIZATION FedEx	DATE 5/22/20	TIME 1030
RECEIVED BY: SIGNATURE/ORGANIZATION Jim	DATE 6/22/20	TIME 1030

SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	NOTES: 29
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE



APPENDIX C
DATA USABILITY SUMMARY REPORT

MEMO

Project name **Data Usability Summary Report for One Holland Avenue Site,
Sampling May 2020**
Project no. **14206/75107.100.020**
Client **Feintool**
Memo no. **1**
Version **1**
To **Mark Randazzo, CHMM, CPG, CSP**
From **Karen Storne**

Date September 2, 2020

This Data Usability Summary Report (DUSR) presents the results of data validation performed for groundwater samples collected by Ramboll in May 2020 as part of the 1-5 Holland Avenue Site Remedial Investigation (RI) in White Plains, New York.

Merit Laboratories, Inc. (Merit) of East Lansing, Michigan performed the laboratory analyses for the sampling event. The laboratory packages contain summary forms for quality control analysis and supportive raw data.

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USA

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The analysis performed for this sampling event is summarized in Table 1.

Table 1. Analytical Methods and References

Parameter	Method	Reference
Volatile Organic Compounds (VOCs)	USEPA Method 8260B/8260C/SIM	1

Notes:

1. United States Environmental Protection Agency (USEPA). 2006. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846*, 3rd Edition. Washington D.C.
2. SIM indicates selected ion monitoring.

The samples submitted for data validation are summarized in attached Table 2. Table 3 presents the specific data validation approach applied to data generated for this investigation. Table 4 presents the Laboratory QA/QC analysis definitions.

Full validation was performed on the samples collected for this sampling event.

The analytical data generated for this investigation were evaluated by Ramboll using the quality assurance/quality control (QA/QC) information presented in the following document:

- O'Brien & Gere. 2010. Quality Control Document (QCD), 1 – 5 Holland Avenue Site White Plains, New York. Syracuse, New York.

Data affected by excursions from the previously mentioned QA/QC criteria were qualified using the following USEPA data validation guidance and professional judgment:

- USEPA. 2014. USEPA Region II Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B & 8260C, SOP HW-24 Revision 4.

Qualifiers were applied to data that failed to meet the quality control criteria presented in the USEPA methods and the QCD applying professional judgement.

The validation included evaluating the following audit parameters:

- QCD compliance
- Chain-of-custody record
- Sample collection
- Holding times
- Calibrations
- Blank analysis
- Surrogate results
- Matrix spike/ matrix spike duplicate (MS/MSD) analysis
- Laboratory control sample (LCS) analysis
- Internal standards performance
- Field duplicate analysis
- Gas chromatography/mass spectrometry (GC/MS) instrument performance check
- Target analyte quantitation, identification, and quantitation limits (QLs); and
- Documentation completeness.

The following sections of this report present the results of the comparison of the analytical data to the QA/QC criteria specified above. Based on the QA/QC information review, an overall evaluation of data usability is also presented in the final section.

1 Volatile Organic Compound data evaluation summary

The following QA/QC parameters were found to meet method and validation criteria or did not result in additional qualification of sample results:

- QCD compliance
- Chain-of-custody record
- Sample collection
- Holding times
- Surrogate results
- LCS analysis

- Internal standards performance
- Field duplicate analysis
- GC/MS instrument performance check
- Target analyte identification

Excursions from method or validation criteria and additional observations are described below.

1.1 Blank analysis

The following results were qualified as non-detected (U) due to minor blank representativeness excursions:

- Results for acetone in samples MW-1, MW-2, MW-2SB, MW-2DB, MW-4S, MW-4D, MW-5, MW-5SB, MW-5DB, MW-7, MW-7SB, MW-8, MW-8SB, MW-9, MW-9SB, and MW-BD-1 [MW-2SB].
- Result for 1,2,4-trichlorobenzene in sample MW-2SB.

1.2 Calibrations

The following results were qualified as approximate (UJ, J) due to minor calibration accuracy excursions:

- Results for acetone in samples MW-1, MW-2, MW-2SB, MW-2DB, MW-4S, MW-4D, MW-5, MW-5SB, MW-5DB, MW-7, MW-7SB, MW-8, MW-8SB, MW-9, MW-9SB, MW-BD-1 [MW-2SB], and TB-1.
- Results for dichlorodifluoromethane in samples MW-1, MW-2SB, MW-2DB, MW-4D, MW-5SB, MW-7, MW-8, and TB-1.

1.3 Target Analyte Quantitation and QLS

Sample results detected at concentrations greater than laboratory MDLs but less than laboratory QLS were qualified as approximate (J).

Selected sample results were reported using diluted analyses due to elevated concentrations of target analytes.

1.4 Document Completeness

As requested during data validation, the laboratory revised the quantitation reports for the samples collected during this sampling event. During the secondary review, the laboratory identified a reporting error and revised the majority of the sample results. The revised results were included in the data validation report.

2 DATA USABILITY

The groundwater samples collected as part of the 1-5 Holland Avenue Site RI in White Plains, New York were evaluated based on QA/QC criteria established by methods as listed in Table 1 and the data validation approach as described in Table 3.

Major deficiencies in the data generation process would have resulted in results being rejected, indicating that the rejected data are considered unusable for either quantitative or qualitative purposes. Major excursions were not identified during the validation process. Minor deficiencies in the data generation process resulted in sample data being characterized as approximate or non-detected as specified above.

A discussion of the data quality with regard to the data usability parameters follows:

Precision: Data were not rejected for precision excursions.

Sensitivity: Sensitivity is established by QLs, which represent measurable concentrations of analytes which can be determined with a designated level of confidence, that meet project requirements. Dilutions were not performed for these analyses.

Accuracy: Results were not rejected due to major accuracy excursions.

Representativeness: Results were not rejected due to major representativeness excursions.

Comparability: Data usability with respect to comparability is 100 percent, as standardized analytical methods, QLs, reference materials, and data deliverables were used throughout the data generation process for this project.

Completeness: Overall data usability with respect to completeness is 100 percent for the complete data set. Therefore, the data were identified as usable for qualitative and quantitative purposes

Table 2. Sample Cross Reference List

Laboratory	Date Collected	Laboratory ID	Client ID	Matrix	Analysis Requested
Merit	5/21/2020	S14189.01	MW-1	Monitoring Wells	VOCs by 8260C, SIM 8260B
Merit	5/21/2020	S14189.02	MW-2	Monitoring Wells	VOCs by 8260C, SIM 8260B
Merit	5/21/2020	S14189.03	MW-2SB	Monitoring Wells	VOCs by 8260C, SIM 8260B
Merit	5/21/2020	S14189.04	MW-2SB MS	Monitoring Wells	VOCs by 8260C, SIM 8260B
Merit	5/21/2020	S14189.05	MW-2SB MSD	Monitoring Wells	VOCs by 8260C, SIM 8260B
Merit	5/21/2020	S14189.06	MW-2DB	Monitoring Wells	VOCs by 8260C, SIM 8260B
Merit	5/21/2020	S14189.07	MW-4S	Monitoring Wells	VOCs by 8260C, SIM 8260B
Merit	5/21/2020	S14189.08	MW-4D	Monitoring Wells	VOCs by 8260C, SIM 8260B
Merit	5/21/2020	S14189.09	MW-5	Monitoring Wells	VOCs by 8260C, SIM 8260B
Merit	5/21/2020	S14189.10	MW-5SB	Monitoring Wells	VOCs by 8260C, SIM 8260B
Merit	5/21/2020	S14189.11	MW-5DB	Monitoring Wells	VOCs by 8260C, SIM 8260B
Merit	5/21/2020	S14189.12	MW-7	Monitoring Wells	VOCs by 8260C, SIM 8260B
Merit	5/21/2020	S14189.13	MW-7SB	Monitoring Wells	VOCs by 8260C, SIM 8260B
Merit	5/21/2020	S14189.14	MW-8	Monitoring Wells	VOCs by 8260C, SIM 8260B
Merit	5/21/2020	S14189.15	MW-8SB	Monitoring Wells	VOCs by 8260C, SIM 8260B
Merit	5/21/2020	S14189.16	MW-9	Monitoring Wells	VOCs by 8260C, SIM 8260B
Merit	5/21/2020	S14189.17	MW-9SB	Monitoring Wells	VOCs by 8260C, SIM 8260B
Merit	5/21/2020	S14189.18	MW-BD-1 [MW-2SB]	Monitoring Wells	VOCs by 8260C, SIM 8260B
Merit	5/21/2020	S14189.19	TB-1	Aqueous	VOCs by 8260C, SIM 8260B

Notes:

1. Merit indicates Merit Laboratories, Inc. of East Lansing, Michigan.
2. MS, MSD indicates matrix spike, matrix spike duplicate.
3. The sample identification utilized for the field duplicate location is listed in brackets.
4. VOCs indicate volatile organic compounds.

Table 3.

Ramboll Data Validation Approach using USEPA National Functional Guidelines for Non-CLP Methods for VOCs by USEPA Method 524.2 and 8260.

Laboratory Methods and Data Validation Approach	The Ramboll data validation approach utilizes the <u>methods</u> applied by the laboratory to evaluate data. USEPA National Functional Guidelines address data validation of Contract Laboratory Program (CLP) methods. If excursions from the <u>method</u> quality control requirements are identified, Ramboll applies a similar approach as used in the USEPA National Functional Guidelines to apply validation qualifiers to the data associated with the excursions.
General Validation Approach	The validation approach taken by Ramboll is a conservative one; qualifiers are applied to sample data to indicate both major and minor excursions so that data associated with any type of excursion are identified to the data user. Major excursions result in data being rejected (R), indicating that the data are considered unusable for either quantitative or qualitative purposes. Minor excursions result in sample data being qualified as approximate (J, UJ, JN) or non-detected (U) that is otherwise usable for quantitative or qualitative purposes.
	Excursions are subdivided into excursions that are within the laboratory's control and those that are a result of site conditions. Excursions involving laboratory control sample recovery, calibration response, method blank excursions, low or high spike recovery due to inaccurate spiking solutions or poor instrument response, holding times, interpretation errors, and quantitation errors are within the control of the laboratory. Excursions resulting from matrix spike recovery, surrogate, and internal standard performance due to interference from the matrix of the samples are examples of those excursions that are due to site conditions and are not within the laboratory's control if the laboratory has followed proper method procedures, including performing appropriate cleanup techniques.
Applying professional judgment	USEPA National Functional Guidelines allow professional judgment to be used when applying qualifiers in some cases. When utilizing professional judgment, justification for actions taken will either be provided in the associated report or will be available upon request.
Validation Parameter	Ramboll Data Validation Approach based on: USEPA. 2014. National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-014-002. Washington, D.C.
Validation Qualifiers - Organics	U - The analyte was analyzed for, but was not detected above the level of the quantitation limit (QL). J - The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the QL). J(+) - The result is an approximate concentration, but the result may be biased high. J(-) - The result is an approximate concentration, but the result may be biased low.

Table 3.

Ramboll Data Validation Approach using USEPA National Functional Guidelines for Non-CLP Methods for VOCs by USEPA Method 524.2 and 8260.

	NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. UJ - The analyte was not detected at a level greater than or equal to the QL. However, the QL is approximate and may be inaccurate or imprecise. R - The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample. C - This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS). X - This qualifier applies to pesticide and Aroclor results when not confirmed when GC/MS analysis was performed.
Cooler Temperature	Results for samples submitted for organic analyses that are impacted by coolers that did not contain ice, or if the ice melted upon receipt and/or the cooler temperatures are greater than 10°C, are qualified as approximate (UJ, J). If samples are delivered to the laboratory the same day as sample collection and samples did not have sufficient time to reach 10°C, samples are not qualified, unless proper preservation was not provided for samples between sample collection and sample receipt at the laboratory. Results for samples received at ambient temperature involved in extended shipment-day issues may be rejected, applying professional judgment.
Holding Time for VOCs	For method 524.2, analyze within 14 days from collection for samples properly collected and preserved to pH ≤ 2. If not preserved, analyzed within 24 hours of collection. For method 8260, analyze within 14 days from collection for samples properly collected and preserved to pH ≤ 2. If not preserved, analyzed within 7 days of collection.
Holding Time Evaluation for VOCs	Results for samples properly preserved and analyzed outside of but less than two times the holding time window established in the method or the QAPP for preparation and/or analysis are qualified as approximate (UJ, J). Non-detected results for samples properly preserved and analyzed <u>greater than two times the holding time</u> window for preparation and/or analysis are <u>rejected</u> (R). Detected results for samples properly preserved and analyzed greater than two times the holding time window for preparation and/or analysis are qualified as approximate (J).

Table 3.

Ramboll Data Validation Approach using USEPA National Functional Guidelines for Non-CLP Methods for VOCs by USEPA Method 524.2 and 8260.

Calibration Actions for VOCs	Due to relative standard deviation (RSD) calibration excursions, detected results for analytes in samples associated with the calibration are qualified as approximate (J). Non-detected results associated with RSD excursions may be qualified as approximate (UJ) based on professional judgment and considering historical actions. Due to %D calibration verification excursions, detected and non-detected results for analytes in samples associated with the calibration are qualified as approximate (J, UJ). For response factor excursions, detected results are qualified as approximate, biased high (J+) and non-detected results are <u>rejected</u> (R). For initial calibration verifications (ICV) excursions, detected and non-detected results for analytes in samples associated with the calibration are qualified as approximate (J, UJ).
VOCs Instrument Performance (IP) Evaluation	IP requirements may not apply when Selected Ion Monitoring (SIM) is used for analysis. Refer to the laboratory SOP. If IP fails 12-hour clock time frequency or ion abundance criteria, associated sample result are <u>rejected</u> (R).
VOCs Calibration Evaluation for USEPA Method 524.2	VOC target analytes are evaluated using the criteria of 20 percent relative standard deviation (%RSD) or correlation coefficient criteria of 0.990 for initial calibration curves. Calibration verifications (CCV) are evaluated using a criterion of less than or equal to 30 percent difference (%D) and within 70 to 130 percent recovery (%R) for target analytes. Initial calibrations and calibration verifications are also evaluated using the response factor (RF) criteria of 0.05. If analyzed, the second-source standard or low standard is evaluated using a 30% recovery or the laboratory control limits.
VOCs Calibration Evaluation for USEPA Method 8260B	VOC target analytes are evaluated using the criteria of 15 percent relative standard deviation (%RSD) or correlation coefficient criteria of 0.990 for initial calibration curves. Calibration verifications are evaluated using a criterion of less than or equal to 20 percent difference (%D) for continuing calibration check compounds and a %D of less than or equal to 50 for the remaining target analytes. Initial calibrations and calibration verifications are also evaluated using the response factor (RF) criteria described in the method for system performance check compounds, a criterion of greater than or equal to 0.010 for ketones, and a criterion of 0.05 for the remaining target analytes. If analyzed, the initial calibration verification (second-source standard or low standard) is evaluated using a 30% recovery or the laboratory control limits.
Associating samples with Field and Laboratory QC Samples	Trip blanks are associated with samples in the same sample cooler.
	Method blanks are associated with samples prepared at the same time or analyzed in the same analytical batch as the samples. Method blanks should reflect the sample matrix type.
	LCSs are associated with samples prepared at the same time or analyzed in the same analytical batch as the samples.

Table 3.

Ramboll Data Validation Approach using USEPA National Functional Guidelines for Non-CLP Methods for VOCs by USEPA Method 524.2 and 8260.

	MS/MSD samples are collected in the field. The laboratory must prepare using project samples. MS/MSDs are associated with samples prepared at the same time or close to the same time with the same matrix type.
	Field duplicates are collected in the field and are associated with samples of the same matrix type.
	In the case that insufficient QC samples are provided due to field or laboratory problems, use professional judgment to associate each sample with a QC sample that reflects the sample matrix and analysis conditions. If insufficient QC samples are available to properly associate samples, record the impact in the DV notes.
Evaluation and Action for MS/MSD, LCS, Surrogate and Laboratory Duplicate Data for VOCs	The laboratory control limit (CL) is used to assess MS/MSD, LCS, surrogate and laboratory duplicate data. Refer to EPA method guidelines if laboratory control limits are not available.
	In the case that excursions are identified in more than one quality control sample of the same matrix within one sample delivery group, samples are batched according to sample preparation or analysis date and qualified accordingly (see batching description above).
	For surrogates and LCSs, if percent recoveries are less than laboratory CLs but greater than 10%, non-detected results are qualified as approximate (UJ) and detected results are qualified approximate biased low (J ⁻).
	For VOC MS/MSD, if percent recoveries are less than laboratory CLs but greater than 20%, non-detected results are qualified as approximate (UJ) and detected results are qualified as approximate (J).
	For surrogates and LCSs, if percent recoveries are greater than laboratory CLs, detected results are qualified as approximate biased high (J ⁺).
Evaluation and Actions for Blank Results (Method) for VOC Data	Blanks are not qualified due to contamination of another blank. Sample results qualified as non-detected (U) are treated as hits when qualifying for surrogate or calibration excursions. The following approach is utilized for applying qualifiers, using twice the quantitation limit (QL) for methylene chloride, 2-butanone, acetone based on historical actions: 1. For blank results less than the QL, samples with concentrations less than the QL are reported at the QL and qualified as non-detected (U). Samples with concentrations greater than or equal to the QL are not qualified or may apply the Blank Rule Option. 2. For blank results greater than the QL, samples with concentrations less than the QL are reported at the QL and qualified as non-detected (U). Samples with concentrations greater than or equal to the QL and less than the blank contamination level are reported and qualified as non-detected (U). Samples with concentrations greater than or equal to the QL and greater than or equal to the blank contamination level are not qualified or may apply the Blank Rule Option.

Table 3.

Ramboll Data Validation Approach using USEPA National Functional Guidelines for Non-CLP Methods for VOCs by USEPA Method 524.2 and 8260.

	3. For blank results equal to the QL, sample concentrations less than the QL are reported at the QL value and qualified as non-detected (U). Samples greater than or equal to the QL are not qualified or may apply the Blank Rule Option. 4. For gross contamination in blanks (saturated peaks, interference peaks, poor baselines), all associated sample detected results are <u>rejected</u> (R) or qualified as non-detected (U) using professional judgment. Blank Rule Option: If methylene chloride, acetone or 2-butanone is detected in the sample at a concentration that is less than ten times the concentration in the associated blank, the sample result is qualified as "U". If other target analytes are detected in the sample at a concentration that is less than five times the concentration detected in the associated blank, the sample result is qualified as "U".
Evaluation of MS/MSD, Surrogate, and Field Duplicate Data for VOCs	Qualification is performed only when both MS and MSD recoveries are outside of laboratory CLs.
	Organic data are <u>rejected</u> (R) in the case that both MS/MSD recoveries are less than 20%.
	Qualification is not performed if MS/MSD or surrogate recoveries are outside of laboratory CLs with an analysis that applied a dilution factor of 10 times or more.
	Qualification of data associated with MS/MSD or field duplicate excursions is limited to the un-spiked sample or the field duplicate pair, respectively.
	Field duplicate data are evaluated against relative percent difference (RPD) criteria of less than 50 percent for aqueous samples and less than 100 percent for soils when results are greater than or equal to five times the QL. When a field duplicate result is less than five times the QL, a control limit of plus or minus two times the QL (difference criterion) is applied. If RPDs or differences are outside of criterion, detected and non-detected results are qualified as approximate (UJ, J) to indicate minor excursions.
Evaluation of Internal Standards for samples (VOCs for USEPA Method 524.2)	Internal standard areas of samples are evaluated using the validation control limit of 70 to 130 percent recovery when compared to the calibration verification associated with the samples.
Evaluation of CCVs (VOCs for USEPA Method 524.2)	Internal standard areas of CCVs are evaluated using the validation control limit of 50 to 100 percent recovery when compared to the initial calibration.
Target Analyte Identifications for VOCs	If incorrect target analyte identifications were made due to data interpretation, interference or laboratory transcription errors, the associated result will be corrected or <u>rejected</u> (R), applying professional judgment.

Table 3.

Ramboll Data Validation Approach using USEPA National Functional Guidelines for Non-CLP Methods for VOCs by USEPA Method 524.2 and 8260.

Evaluation of Internal Standards for VOCs	Internal standard recoveries are evaluated using control limits of from 50% of the lower standard area to 200% of the upper standard area of the associated calibration verification standard. The results associated with internal standard area recoveries 20% or greater but less than 50%, detected results are qualified as approximate biased high (J⁺) and non-detected results are qualified as approximate (UJ). The results associated with internal standard area recoveries greater than 200%, detected results are qualified as approximate biased low (J⁻). Non-detected results associated with internal standard area recoveries less than 20% are <u>rejected</u> (R) and detected results are qualified approximate biased high (J⁺).
	<i>Source Ramboll</i>

Table 4. Summary of QA/QC Analyses Term Definitions

QA/QC Term	Definition
Quantitation limit	The level above which numerical results may be obtained with a specified degree of confidence; the minimum concentration of an analyte in a specific matrix that can be identified and quantified above the method detection limit and within specified limits of precision and bias during routine analytical operating conditions.
Method detection limit	The minimum concentration of an analyte that undergoes preparation similar to the environmental samples and can be reported with a stated level of confidence that the analyte concentration is greater than zero. Method detection limits are calculated by statistical means utilizing a minimum of seven points and is performed annually. .
Instrument detection limit	The lowest concentration of a metal target analyte that, when directly inputted and processed on a specific analytical instrument, produces a signal/response that is statistically distinct from the signal/response arising from equipment "noise" alone. The instrument detection limit is calculated by a statistical method using a minimum of seven points and is performed annually.
Gas chromatography/mass spectrometry (GC/MS) instrument performance check	Performed to verify mass resolution, identification, and to some degree, instrument sensitivity. These criteria are not sample specific; conformance is determined using standard materials.
Calibration	Compliance requirements for satisfactory instrument calibration are established to verify that the instrument is capable of producing acceptable quantitative data. Initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of analysis and calibration verifications document satisfactory maintenance and adjustment of the instrument on a day-to-day basis.
Relative Response Factor	A measure of the relative mass spectral response of an analyte compared to its internal standard. Relative Response Factors are determined by analysis of standards and are used in the calculation of concentrations of analytes in samples.
Relative standard deviation	The standard deviation divided by the mean; a unit-free measure of variability.
Correlation coefficient	A measure of the strength of the relationship between two variables.
Relative Percent Difference	Used to compare two values; the relative percent difference is based on the mean of the two values, and is reported as an absolute value, i.e., always expressed as a positive number or zero.
Percent Difference	Used to compare two values; the percent difference indicates both the direction and the magnitude of the comparison, i.e., the percent difference may be either negative, positive, or zero.
Percent Recovery	The act of determining whether or not the methodology measures all of the target analytes contained in a sample.

Table 4. Summary of QA/QC Analyses Term Definitions

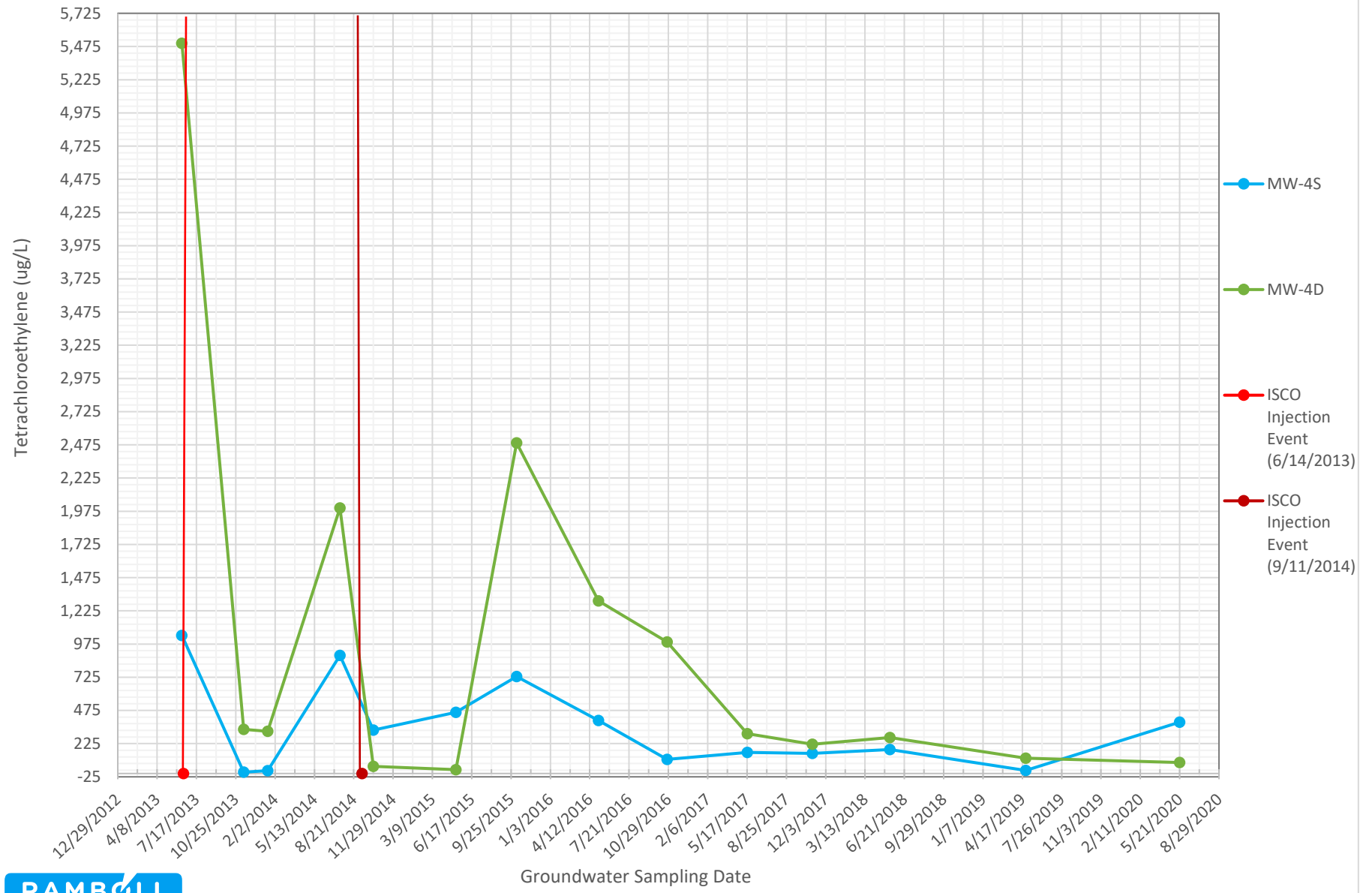
Calibration blank	Consists of acids and reagent water used to prepare metal samples for analysis. This type of blank is analyzed to evaluate whether contamination is occurring during the preparation and analysis of the sample.
Method blank	A water or soil blank that undergoes the preparation procedures applied to a sample (i.e., extraction, digestion, clean-up). These samples are analyzed to examine whether sample preparation, clean-up, and analysis techniques result in sample contamination.
Field/equipment	Collected and submitted for laboratory analysis, where appropriate. Field/equipment blanks are handled in the same manner as environmental samples. Equipment/field blanks are analyzed to assess contamination introduced during field sampling procedures.
Trip blank	Consist of samples of analyte-free water preserved in the same manner as the environmental samples that have undergone shipment from the sampling site to the laboratory in coolers with the environmental samples submitted for volatile organic compound (VOC) analysis. Trip blanks will be analyzed for VOCs to determine if contamination has taken place during sample handling and/or shipment. Trip blanks will be utilized at a frequency of one each per cooler sent to the laboratory for VOC analysis.
Internal standards performance	Compounds not found in environmental samples which are spiked into samples and quality control samples at the time of sample analysis. Internal standards must meet retention time and recovery criteria specified in the analytical method. Internal standards are used as the basis for quantitation of the target analytes and/or to monitor instrument performance.
Surrogate recovery	Compounds similar in nature to the target analytes but not expected to be detected in the environmental media which are spiked into environmental samples, blanks, and quality control samples prior to sample preparation for organic analyses. Surrogates are used to evaluate analytical efficiency by measuring recovery.
Laboratory control sample Matrix spike blank analyses	Standard solutions that consist of known concentrations of the target analytes spiked into laboratory analyte-free water or sand. They are prepared or purchased from a certified manufacturer from a source independent from the calibration standards to provide an independent verification of the calibration procedure. They are prepared and analyzed following the same procedures employed for environmental sample analysis to assess method accuracy independently of sample matrix effects.
Laboratory duplicate	Two or more representative portions taken from one homogeneous sample by the analyst and analyzed in the same laboratory.
Matrix	The material of which the sample is composed or the substrate containing the analyte of interest, such as drinking water, waste water, air, soil/sediment, biological material.
Matrix Spike (MS)	An aliquot of a matrix (water or soil) fortified (spiked) with known quantities of specific target analytes and subjected to the entire analytical procedure in order to indicate the appropriateness of the method for the matrix by measuring recovery.

Table 4. Summary of QA/QC Analyses Term Definitions

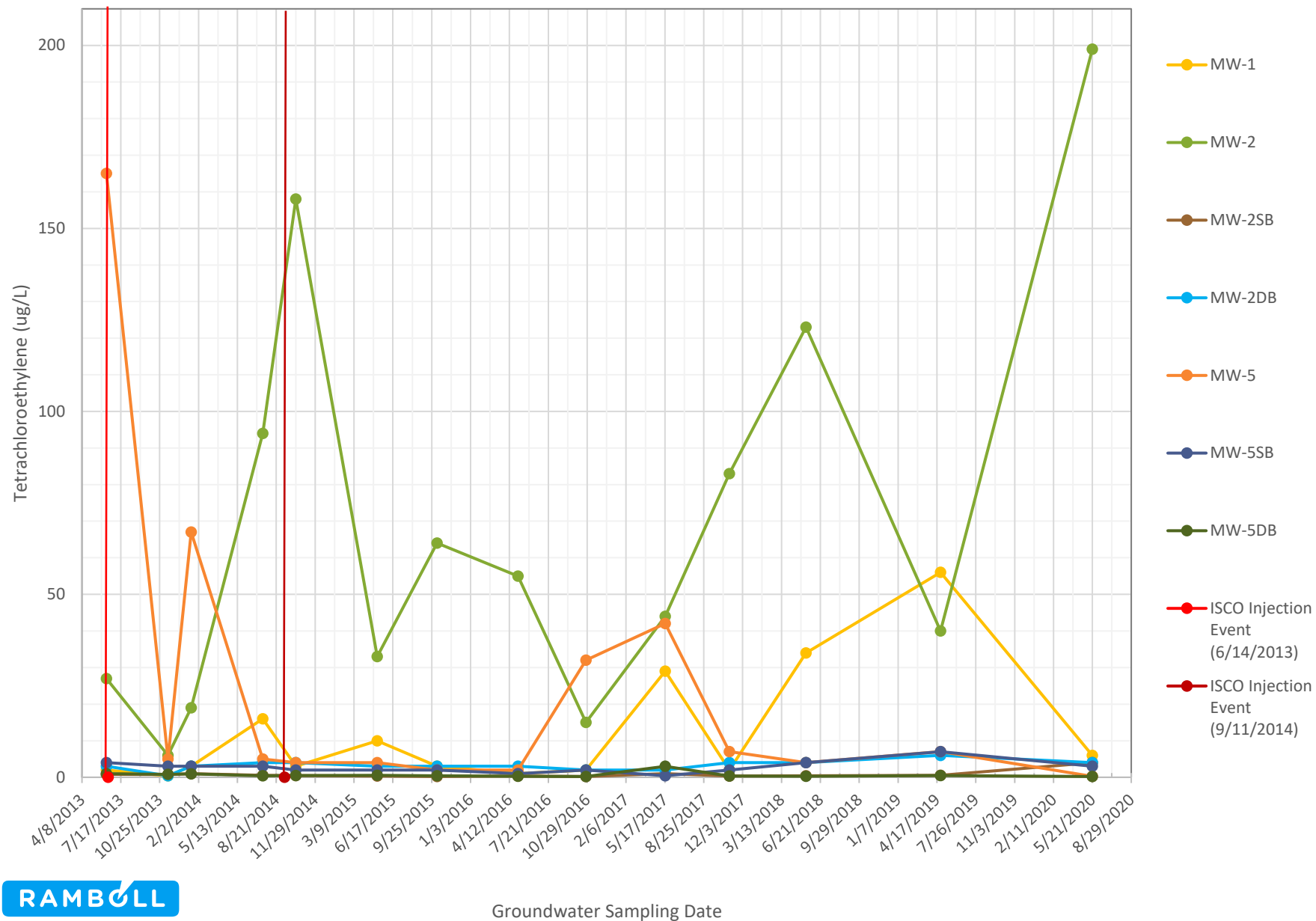
Matrix spike duplicate (MSD)	A second aliquot of the same matrix as the matrix spike that is spiked in order to determine the precision of the method.
Retention time	The time a target analyte is retained on a GC column before elution. The identification of a target analyte is dependent on a target compound's retention time falling within the specified retention time window established for that compound.
Relative retention time	The ratio of the retention time of a compound to that of a standard.
<i>Source Ramboll</i>	

APPENDIX D
GRAPHICAL PRESENTATION OF PCE GROUNDWATER CONCENTRATIONS

Source Area Wells



Downgradient On-site Wells



Downgradient Offsite Wells

