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November 17, 2020

Mr. Joseph T. Martella II, Senior Engineer
Rhode Island Department of Environmental Management
Office of Waste Management
Site Remediation Program
235 Promenade Street
Providence, Rhode Island 02908

**RE: Parcel C Groundwater Sampling – September 2, 2020
Former Gorham Manufacturing Facility
333 Adelaide Avenue, Providence, Rhode Island
Wood Project No. 3651180035**

Dear Mr. Martella:

This letter summarizes the September 2, 2020 collection and analysis of groundwater samples from monitoring well MW-D within Parcel C at the Former Gorham Manufacturing Site in Providence, Rhode Island (Figure 1). This activity was performed to supplement historic periodic groundwater testing done between July 2015 and September 2017. The groundwater sampling was conducted in accordance with the Remedial Action Work Plan (RAWP) dated March 11, 2015 and the corresponding Rhode Island Department of Environmental Management (RIDEM) July 9, 2015 Order of Approval (Order of Approval).

Background

Extensive groundwater investigations were previously conducted throughout the upland portions of the Former Gorham Manufacturing Site property, including Parcel C, and within the Mashapaug Inner and Outer Coves. The groundwater investigations identified low levels of volatile organic compounds (VOCs) in groundwater immediately upgradient of and along the southern shore of the Inner Cove (Parcels C and C-1).

Based on 2006-2010 groundwater data, tetrachloroethylene and trichloroethylene (PCE/TCE) were present at low levels in groundwater from the northwestern corner of Parcel C. Groundwater and Inner Cove sediment data collected during the same period (2006-2010) demonstrated that a clear trend of decreasing contaminant concentrations within the groundwater had occurred over time.

RIDEM's Order of Approval required Textron to monitor Parcel C/C-1 groundwater following completion of the remedial action in December 2015, by sampling six wells (MW-235S, MW-236S, MW-237S, MW-D, MW-241, and MW-FS) until data from three consecutive sampling rounds demonstrate that Parcel C groundwater is compliant with RIDEM's GB Groundwater Objectives with no increasing concentrations of VOCs, and that Parcel C-1 groundwater is compliant with the Massachusetts Department of Environmental Protection (MassDEP) GW-3 Standards with no increasing concentrations of VOCs. The April 2016 sampling event confirmed that both MW-FS and MW-237S met the required criteria of three consecutive decreasing rounds of groundwater data and data below the MassDEP GW-3 Standards. These two wells were eliminated from the groundwater monitoring program (April 2016 groundwater monitoring report).



Three more wells were eliminated from monitoring following the July 2016 sampling round, including MW-235S, MW-236S, and MW-241, in accordance with the Order of Approval. Since September 2016, only MW-D has been sampled; it has been sampled eight times (September and December 2016, March and September 2017, and April and October 2019, March and September 2020).

At the time of the Parcel C Closure Report submittal in May 2017, TCE and 1,1-dichloroethene (1,1-DCE) were the only analytes present above their respective GB Groundwater Objectives in MW-D. In 2016 and 2017, TCE had been detected at concentrations ranging from 1.4 milligrams per liter (mg/L) to 3.32 mg/l, above its GB Groundwater Objective of 0.54 mg/L. Concentrations of 1,1-DCE ranged from 0.002 mg/L to 0.0149 mg/l; some of these results exceeded the GB Groundwater Criteria of 0.007 mg/L. Concentration trends for both analytes were generally decreasing during 2017.

On April 11, 2019, Wood sampled the one remaining groundwater monitoring well, MW-D (Figure 2). Sample collection included a duplicate groundwater sample from MW-D. The results were presented in a letter report dated May 9, 2019. All April 2019 VOC results, including those for 1,1-DCE and TCE, were below the GB Groundwater Objectives, continuing the decreasing trend observed in 2017.

On October 17, 2019, Wood again sampled monitoring well MW-D, including a duplicate sample. VOC results for 1,1-DCE and TCE increased to slightly above their respective RI GB standard, but remained below their MassDEP GW-3 standard. The results for the two compounds continued to show a gradual long-term downward trend since 2016.

On March 6, 2020, Wood sampled the one remaining groundwater monitoring well, including a duplicate sample. VOC results for 1,1-DCE and TCE continued to have a gradual downward trend. Results for 1,1-DCE were below both the GB Groundwater Objective and the MassDEP GW-3 Standard while TCE results were still above its GB Groundwater Objective but remained below its MassDEP GW-3 standard.

September 2020 Activities

On September 2, 2020, APTIM sampled the one remaining groundwater monitoring well, MW-D (Figure 2), using the U.S. Environmental Protection Agency (USEPA) low-flow methodology. The one sample was submitted under chain-of-custody control to an off-site laboratory for VOC analysis by USEPA Method 8260B. Field data records for this groundwater sampling event are included in **Appendix A**.

Groundwater Sampling Results

Table 1 summarizes the historic VOC concentrations detected in MW-D including the September 2020 groundwater sampling event. VOC concentrations detected in Parcel C (including MW-D) are compared to the GB Groundwater Objectives, as well as the MassDEP GW-3 Standards. The analytical laboratory report for the September 2020 groundwater sampling event is included in **Appendix B**.

As shown in **Table 1**, results from the September 2020 sampling round show that only TCE was detected and the concentration was slightly higher than in the March 2020 sample. The TCE concentration was above its GB Groundwater Objective but remained below its MassDEP GW-3 standard. Historically, 1,1-DCE is the other compound detected in MW-D. This compound was not detected in the September 2020 sample consistent with the downward trend from past events.

Groundwater Monitoring Approach

Based on the extensive groundwater data collected, VOC concentrations within the northwestern area of Parcel C have been reduced. In 2016 and 2017, only MW-D continued to exhibit exceedances of GB Groundwater Objectives, in particular TCE and 1,1-DCE. Concentrations of those analytes had reduced to below their respective criteria by April 2019, likely as a result of continued biodegradation and natural attenuation in the groundwater. Subsequent to concentrations rebounding slightly above the criteria in October 2019, they have either stayed steady or decreased over the last two sampling events in 2020. The results continued to show an overall downward trend since 2016.

The Parcel C/C-1 area is currently being used by the City of Providence School Department as a soccer field. No buildings are planned in the area of MW-D which is located within the woods on the downhill side of a detention basin. The final Environmental Land Use Restrictions (ELUR) and Soil Management Plan (SMP) has been signed by the City of Providence and filed in the Providence Land Evidence Records. A copy of this signed ELUR and SMP was submitted to RIDEM for their records. The ELUR includes the provision preventing the use of the groundwater for potable and non-potable use, and that no subsurface structures can be constructed over the groundwater without prior approval from RIDEM.

Textron proposes to continue monitoring the groundwater quality at MW-D on a semi-annual basis, pending continued compliance with RIDEM's GB Groundwater Objectives. The next scheduled sampling event is for March 2021. A report will be prepared and submitted to the RIDEM in April 2021, to update the status of this one monitoring well.

Please contact Greg Simpson, Textron, (401-457-2635) or Gregory Avenia, Wood, (401-648-9243392-5312) if we can provide additional information or answer any questions concerning these groundwater monitoring data and planned future sampling of MW-D.

Sincerely,

Wood Environment & Infrastructure Solutions, Inc.



Mark Maggiore
Environmental Scientist



Gregory Avenia

Enclosures: Table 1 – Summary of Parcel C/C-1 Groundwater Results 1989 – 2020
Figure 1 – Site Location Map
Figure 2 – Parcel C/C-1 Site Map
Appendix A – Field Data Record September 2020 Sampling Event
Appendix B – Laboratory Report September 2020 Sampling Event

cc: Robert Azar, Deputy Director - Providence Planning & Development
G. Simpson, Textron, Inc. (Electronic)
Knight Memorial Library Repository
Wood Project File



wood.

Tables





wood.

Figures





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Location of Site



SITE LOCATION MAP

Former Gorham
Manufacturing Site

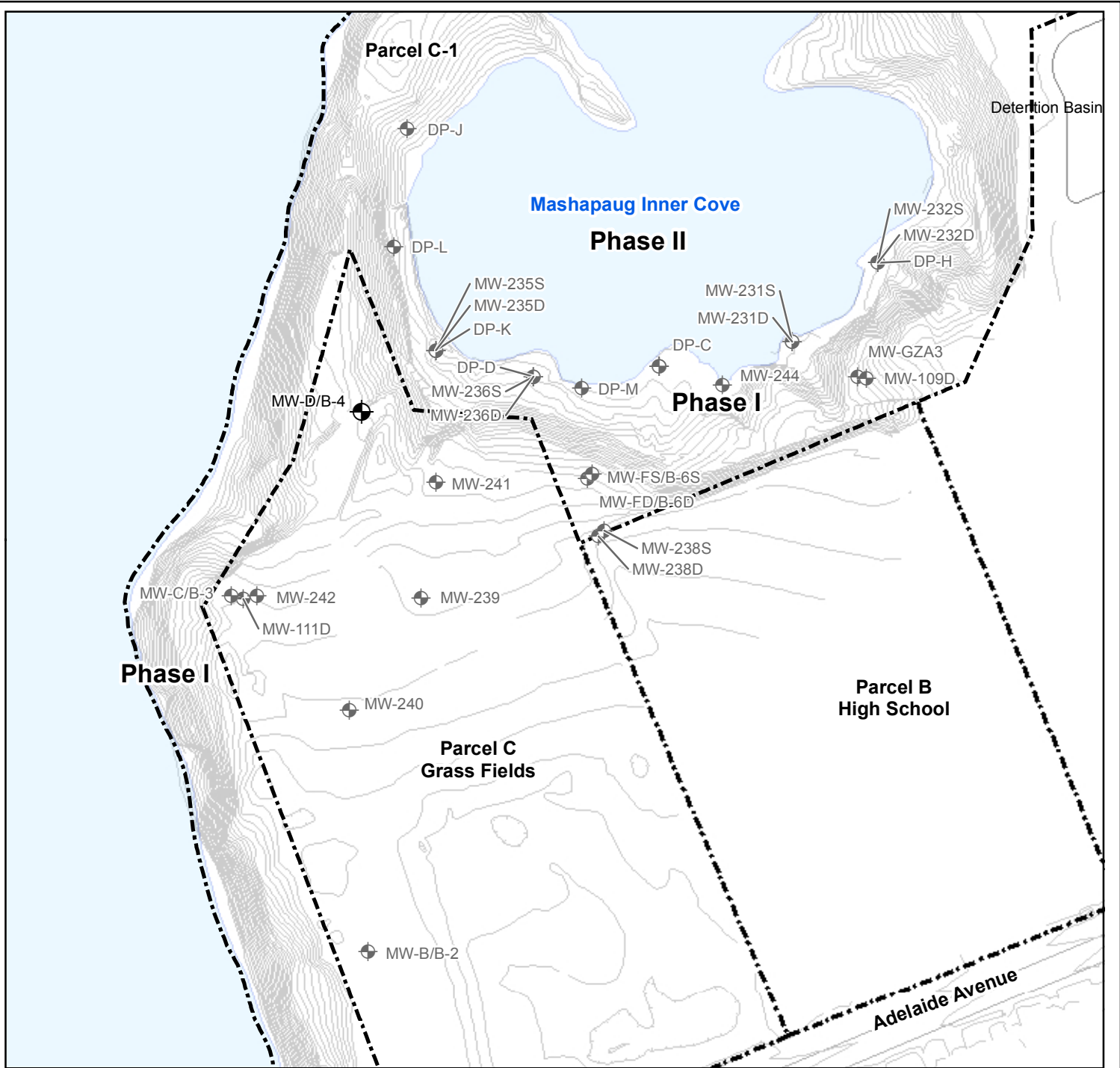
333 Adelaide Avenue
Providence, Rhode Island

Notes & Sources

0 1,000 2,000
Feet

wood.
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N
FIGURE
1



**PARCEL C:
MW-D**

Former Gorham
Manufacturing Site

333 Adelaide Avenue
Providence, Rhode Island

Legend	
	Existing Monitoring Well
	Abandoned Monitoring Well
	Approximate Site Boundary
	Mashapaug Pond
	Elevation Contour



Notes & Sources

0 140 Feet

N

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271 Mill Road
Chelmsford, MA 01824
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FIGURE
2

Appendix A

Field Data Record September 2020 Sampling Event

Appendix B

Laboratory Report, September 2020 Sampling Event

September 10, 2020

Catherine Joe Mainville
APTIM - MA
150 Royall Street
Canton, MA 02021

Project Location: 333 Adelaide Ave., Providence, RI
Client Job Number:
Project Number: 631010697
Laboratory Work Order Number: 20I0144

Enclosed are results of analyses for samples received by the laboratory on September 2, 2020. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "R. J. McCarthy", is displayed on a light gray rectangular background.

Raymond J. McCarthy
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

APTIM - MA
150 Royall Street
Canton, MA 02021
ATTN: Catherine Joe Mainville

REPORT DATE: 9/10/2020

PURCHASE ORDER NUMBER: 835493

PROJECT NUMBER: 631010697

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 20I0144

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 333 Adelaide Ave., Providence, RI

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-D-20200902	20I0144-01	Ground Water		SW-846 8260C-D	
TB-1-20200902	20I0144-02	Trip Blank Water		SW-846 8260C-D	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SW-846 8260C-D**Qualifications:****RL-11**

Elevated reporting limit due to high concentration of target compounds.

Analyte & Samples(s) Qualified:

2010144-01[MW-D-20200902]

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:**tert-Amyl Methyl Ether (TAME)**

2010144-01[MW-D-20200902], 2010144-02[TB-1-20200902], B265753-BLK1, B265753-BS1, B265753-BSD1, S052074-CCV1

tert-Butyl Ethyl Ether (TBEE)

2010144-01[MW-D-20200902], 2010144-02[TB-1-20200902], B265753-BLK1, B265753-BS1, B265753-BSD1, S052074-CCV1

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:**Chloromethane**

B265753-BS1, B265753-BSD1, S052074-CCV1

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Technical Representative

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 333 Adelaide Ave., Providence, R

Sample Description:

Work Order: 2010144

Date Received: 9/2/2020

Field Sample #: MW-D-20200902

Sampled: 9/2/2020 13:30

Sample ID: 2010144-01

Sample Matrix: Ground Water

Sample Flags: RL-11

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	1200	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Acrylonitrile	ND	120	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
tert-Amyl Methyl Ether (TAME)	ND	12	µg/L	25	V-05	SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Benzene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Bromobenzene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Bromochloromethane	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Bromodichloromethane	ND	12	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Bromoform	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Bromomethane	ND	50	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
2-Butanone (MEK)	ND	500	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
tert-Butyl Alcohol (TBA)	ND	500	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
n-Butylbenzene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
sec-Butylbenzene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
tert-Butylbenzene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	12	µg/L	25	V-05	SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Carbon Disulfide	ND	120	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Carbon Tetrachloride	ND	120	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Chlorobenzene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Chlorodibromomethane	ND	12	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Chloroethane	ND	50	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Chloroform	ND	50	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Chloromethane	ND	50	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
2-Chlorotoluene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
4-Chlorotoluene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	120	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,2-Dibromoethane (EDB)	ND	12	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Dibromomethane	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,2-Dichlorobenzene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,3-Dichlorobenzene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,4-Dichlorobenzene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
trans-1,4-Dichloro-2-butene	ND	50	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Dichlorodifluoromethane (Freon 12)	ND	50	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,1-Dichloroethane	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,2-Dichloroethane	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,1-Dichloroethylene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
cis-1,2-Dichloroethylene	58	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
trans-1,2-Dichloroethylene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,2-Dichloropropane	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,3-Dichloropropane	ND	12	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
2,2-Dichloropropane	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,1-Dichloropropene	ND	50	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
cis-1,3-Dichloropropene	ND	12	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
trans-1,3-Dichloropropene	ND	12	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Diethyl Ether	ND	50	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 333 Adelaide Ave., Providence, R

Sample Description:

Work Order: 2010144

Date Received: 9/2/2020

Field Sample #: MW-D-20200902

Sampled: 9/2/2020 13:30

Sample ID: 2010144-01

Sample Matrix: Ground Water

Sample Flags: RL-11

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	12	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,4-Dioxane	ND	1200	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Ethylbenzene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Hexachlorobutadiene	ND	15	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
2-Hexanone (MBK)	ND	250	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Isopropylbenzene (Cumene)	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
p-Isopropyltoluene (p-Cymene)	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Methyl Acetate	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Methyl tert-Butyl Ether (MTBE)	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Methyl Cyclohexane	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Methylene Chloride	ND	120	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
4-Methyl-2-pentanone (MIBK)	ND	250	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Naphthalene	ND	50	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
n-Propylbenzene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Styrene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,1,1,2-Tetrachloroethane	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,1,2,2-Tetrachloroethane	ND	12	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Tetrachloroethylene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Tetrahydrofuran	ND	250	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Toluene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,2,3-Trichlorobenzene	ND	120	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,2,4-Trichlorobenzene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,3,5-Trichlorobenzene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,1,1-Trichloroethane	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,1,2-Trichloroethane	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Trichloroethylene	1500	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Trichlorofluoromethane (Freon 11)	ND	50	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,2,3-Trichloropropane	ND	50	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,2,4-Trimethylbenzene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
1,3,5-Trimethylbenzene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Vinyl Chloride	ND	50	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
m+p Xylene	ND	50	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
o-Xylene	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF
Xylenes (total)	ND	25	µg/L	25		SW-846 8260C-D	9/3/20	9/3/20 19:03	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	97.2	70-130	9/3/20 19:03
Toluene-d8	97.6	70-130	9/3/20 19:03
4-Bromofluorobenzene	96.2	70-130	9/3/20 19:03

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 333 Adelaide Ave., Providence, R

Sample Description:

Work Order: 2010144

Date Received: 9/2/2020

Field Sample #: TB-1-20200902

Sampled: 9/2/2020 00:00

Sample ID: 2010144-02

Sample Matrix: Trip Blank Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1	V-05	SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Benzene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Bromodichloromethane	ND	0.50	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Bromoform	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1	V-05	SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Carbon Disulfide	ND	5.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Carbon Tetrachloride	ND	5.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Chloroform	ND	2.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Chloromethane	ND	2.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 333 Adelaide Ave., Providence, R

Sample Description:

Work Order: 2010144

Date Received: 9/2/2020

Field Sample #: TB-1-20200902

Sampled: 9/2/2020 00:00

Sample ID: 2010144-02

Sample Matrix: Trip Blank Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,4-Dioxane	ND	50	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Hexachlorobutadiene	ND	0.60	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Methyl Acetate	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Methyl Cyclohexane	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Methylene Chloride	ND	5.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Naphthalene	ND	2.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Styrene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Toluene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,3,5-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF
Xylenes (total)	ND	1.0	µg/L	1		SW-846 8260C-D	9/3/20	9/3/20 12:52	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	99.6	70-130	9/3/20 12:52
Toluene-d8	97.0	70-130	9/3/20 12:52
4-Bromofluorobenzene	95.8	70-130	9/3/20 12:52

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Sample Extraction Data

Prep Method: SW-846 5030B Analytical Method: SW-846 8260C-D

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20I0144-01 [MW-D-20200902]	B265753	0.2	5.00	09/03/20
20I0144-02 [TB-1-20200902]	B265753	5	5.00	09/03/20

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B265753 - SW-846 5030B

Blank (B265753-BLK1)

Prepared & Analyzed: 09/03/20

Acetone	ND	50	µg/L							
Acrylonitrile	ND	5.0	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							V-05
Benzene	ND	1.0	µg/L							
Bromobenzene	ND	1.0	µg/L							
Bromochloromethane	ND	1.0	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	1.0	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	20	µg/L							
tert-Butyl Alcohol (TBA)	ND	20	µg/L							
n-Butylbenzene	ND	1.0	µg/L							
sec-Butylbenzene	ND	1.0	µg/L							
tert-Butylbenzene	ND	1.0	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							V-05
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	5.0	µg/L							
Chlorobenzene	ND	1.0	µg/L							
Chlorodibromomethane	ND	0.50	µg/L							
Chloroethane	ND	2.0	µg/L							
Chloroform	ND	2.0	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	1.0	µg/L							
4-Chlorotoluene	ND	1.0	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	1.0	µg/L							
1,2-Dichlorobenzene	ND	1.0	µg/L							
1,3-Dichlorobenzene	ND	1.0	µg/L							
1,4-Dichlorobenzene	ND	1.0	µg/L							
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L							
1,1-Dichloroethane	ND	1.0	µg/L							
1,2-Dichloroethane	ND	1.0	µg/L							
1,1-Dichloroethylene	ND	1.0	µg/L							
cis-1,2-Dichloroethylene	ND	1.0	µg/L							
trans-1,2-Dichloroethylene	ND	1.0	µg/L							
1,2-Dichloropropane	ND	1.0	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	1.0	µg/L							
1,1-Dichloropropene	ND	2.0	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	2.0	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
1,4-Dioxane	ND	50	µg/L							
Ethylbenzene	ND	1.0	µg/L							
Hexachlorobutadiene	ND	0.60	µg/L							
2-Hexanone (MBK)	ND	10	µg/L							
Isopropylbenzene (Cumene)	ND	1.0	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L							
Methyl Acetate	ND	1.0	µg/L							

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B265753 - SW-846 5030B

Blank (B265753-BLK1)

Prepared & Analyzed: 09/03/20

Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L							
Methyl Cyclohexane	ND	1.0	µg/L							
Methylene Chloride	ND	5.0	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L							
Naphthalene	ND	2.0	µg/L							
n-Propylbenzene	ND	1.0	µg/L							
Styrene	ND	1.0	µg/L							
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L							
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L							
Tetrachloroethylene	ND	1.0	µg/L							
Tetrahydrofuran	ND	10	µg/L							
Toluene	ND	1.0	µg/L							
1,2,3-Trichlorobenzene	ND	5.0	µg/L							
1,2,4-Trichlorobenzene	ND	1.0	µg/L							
1,3,5-Trichlorobenzene	ND	1.0	µg/L							
1,1,1-Trichloroethane	ND	1.0	µg/L							
1,1,2-Trichloroethane	ND	1.0	µg/L							
Trichloroethylene	ND	1.0	µg/L							
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L							
1,2,3-Trichloropropane	ND	2.0	µg/L							
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L							
1,2,4-Trimethylbenzene	ND	1.0	µg/L							
1,3,5-Trimethylbenzene	ND	1.0	µg/L							
Vinyl Chloride	ND	2.0	µg/L							
m+p Xylene	ND	2.0	µg/L							
o-Xylene	ND	1.0	µg/L							
Xylenes (total)	ND	1.0	µg/L							
Surrogate: 1,2-Dichloroethane-d4	24.3		µg/L	25.0		97.4	70-130			
Surrogate: Toluene-d8	24.5		µg/L	25.0		98.2	70-130			
Surrogate: 4-Bromofluorobenzene	24.3		µg/L	25.0		97.2	70-130			

LCS (B265753-BS1)

Prepared & Analyzed: 09/03/20

Acetone	107	50	µg/L	100		107	70-160			†
Acrylonitrile	8.81	5.0	µg/L	10.0		88.1	70-130			
tert-Amyl Methyl Ether (TAME)	8.58	0.50	µg/L	10.0		85.8	70-130			V-05
Benzene	8.99	1.0	µg/L	10.0		89.9	70-130			
Bromobenzene	9.24	1.0	µg/L	10.0		92.4	70-130			
Bromochloromethane	8.88	1.0	µg/L	10.0		88.8	70-130			
Bromodichloromethane	9.52	0.50	µg/L	10.0		95.2	70-130			
Bromoform	9.69	1.0	µg/L	10.0		96.9	70-130			
Bromomethane	5.13	2.0	µg/L	10.0		51.3	40-160			†
2-Butanone (MEK)	85.6	20	µg/L	100		85.6	40-160			†
tert-Butyl Alcohol (TBA)	83.4	20	µg/L	100		83.4	40-160			†
n-Butylbenzene	8.62	1.0	µg/L	10.0		86.2	70-130			
sec-Butylbenzene	9.47	1.0	µg/L	10.0		94.7	70-130			
tert-Butylbenzene	9.24	1.0	µg/L	10.0		92.4	70-130			
tert-Butyl Ethyl Ether (TBEE)	8.24	0.50	µg/L	10.0		82.4	70-130			V-05
Carbon Disulfide	9.96	5.0	µg/L	10.0		99.6	70-130			
Carbon Tetrachloride	9.04	5.0	µg/L	10.0		90.4	70-130			
Chlorobenzene	9.95	1.0	µg/L	10.0		99.5	70-130			
Chlorodibromomethane	9.42	0.50	µg/L	10.0		94.2	70-130			
Chloroethane	9.82	2.0	µg/L	10.0		98.2	70-130			

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B265753 - SW-846 5030B										
LCS (B265753-BS1)										
Prepared & Analyzed: 09/03/20										
Chloroform	9.31	2.0	µg/L	10.0		93.1	70-130			
Chloromethane	11.9	2.0	µg/L	10.0		119	40-160			V-20 †
2-Chlorotoluene	9.46	1.0	µg/L	10.0		94.6	70-130			
4-Chlorotoluene	9.35	1.0	µg/L	10.0		93.5	70-130			
1,2-Dibromo-3-chloropropane (DBCP)	8.70	5.0	µg/L	10.0		87.0	70-130			
1,2-Dibromoethane (EDB)	9.75	0.50	µg/L	10.0		97.5	70-130			
Dibromomethane	9.40	1.0	µg/L	10.0		94.0	70-130			
1,2-Dichlorobenzene	9.71	1.0	µg/L	10.0		97.1	70-130			
1,3-Dichlorobenzene	10.0	1.0	µg/L	10.0		100	70-130			
1,4-Dichlorobenzene	9.37	1.0	µg/L	10.0		93.7	70-130			
trans-1,4-Dichloro-2-butene	10.0	2.0	µg/L	10.0		100	70-130			
Dichlorodifluoromethane (Freon 12)	8.57	2.0	µg/L	10.0		85.7	40-160			†
1,1-Dichloroethane	9.19	1.0	µg/L	10.0		91.9	70-130			
1,2-Dichloroethane	9.32	1.0	µg/L	10.0		93.2	70-130			
1,1-Dichloroethylene	9.82	1.0	µg/L	10.0		98.2	70-130			
cis-1,2-Dichloroethylene	9.21	1.0	µg/L	10.0		92.1	70-130			
trans-1,2-Dichloroethylene	9.00	1.0	µg/L	10.0		90.0	70-130			
1,2-Dichloropropane	9.28	1.0	µg/L	10.0		92.8	70-130			
1,3-Dichloropropane	9.22	0.50	µg/L	10.0		92.2	70-130			
2,2-Dichloropropane	8.94	1.0	µg/L	10.0		89.4	40-130			†
1,1-Dichloropropene	8.26	2.0	µg/L	10.0		82.6	70-130			
cis-1,3-Dichloropropene	9.06	0.50	µg/L	10.0		90.6	70-130			
trans-1,3-Dichloropropene	9.25	0.50	µg/L	10.0		92.5	70-130			
Diethyl Ether	10.1	2.0	µg/L	10.0		101	70-130			
Diisopropyl Ether (DIPE)	9.09	0.50	µg/L	10.0		90.9	70-130			
1,4-Dioxane	82.4	50	µg/L	100		82.4	40-130			†
Ethylbenzene	9.46	1.0	µg/L	10.0		94.6	70-130			
Hexachlorobutadiene	10.4	0.60	µg/L	10.0		104	70-130			
2-Hexanone (MBK)	83.8	10	µg/L	100		83.8	70-160			†
Isopropylbenzene (Cumene)	9.62	1.0	µg/L	10.0		96.2	70-130			
p-Isopropyltoluene (p-Cymene)	9.07	1.0	µg/L	10.0		90.7	70-130			
Methyl Acetate	9.41	1.0	µg/L	10.0		94.1	70-130			
Methyl tert-Butyl Ether (MTBE)	9.10	1.0	µg/L	10.0		91.0	70-130			
Methyl Cyclohexane	9.33	1.0	µg/L	10.0		93.3	70-130			
Methylene Chloride	9.88	5.0	µg/L	10.0		98.8	70-130			
4-Methyl-2-pentanone (MIBK)	84.6	10	µg/L	100		84.6	70-160			†
Naphthalene	8.32	2.0	µg/L	10.0		83.2	40-130			†
n-Propylbenzene	9.30	1.0	µg/L	10.0		93.0	70-130			
Styrene	9.60	1.0	µg/L	10.0		96.0	70-130			
1,1,1,2-Tetrachloroethane	9.84	1.0	µg/L	10.0		98.4	70-130			
1,1,2,2-Tetrachloroethane	10.0	0.50	µg/L	10.0		100	70-130			
Tetrachloroethylene	10.2	1.0	µg/L	10.0		102	70-130			
Tetrahydrofuran	9.07	10	µg/L	10.0		90.7	70-130			
Toluene	9.40	1.0	µg/L	10.0		94.0	70-130			
1,2,3-Trichlorobenzene	8.87	5.0	µg/L	10.0		88.7	70-130			
1,2,4-Trichlorobenzene	9.16	1.0	µg/L	10.0		91.6	70-130			
1,3,5-Trichlorobenzene	9.32	1.0	µg/L	10.0		93.2	70-130			
1,1,1-Trichloroethane	9.28	1.0	µg/L	10.0		92.8	70-130			
1,1,2-Trichloroethane	9.82	1.0	µg/L	10.0		98.2	70-130			
Trichloroethylene	9.62	1.0	µg/L	10.0		96.2	70-130			
Trichlorofluoromethane (Freon 11)	9.06	2.0	µg/L	10.0		90.6	70-130			
1,2,3-Trichloropropane	9.30	2.0	µg/L	10.0		93.0	70-130			

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B265753 - SW-846 5030B

LCS (B265753-BS1)

Prepared & Analyzed: 09/03/20

1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.6	1.0	µg/L	10.0		106	70-130			
1,2,4-Trimethylbenzene	8.83	1.0	µg/L	10.0		88.3	70-130			
1,3,5-Trimethylbenzene	9.04	1.0	µg/L	10.0		90.4	70-130			
Vinyl Chloride	8.24	2.0	µg/L	10.0		82.4	40-160			†
m+p Xylene	18.6	2.0	µg/L	20.0		92.8	70-130			
o-Xylene	9.45	1.0	µg/L	10.0		94.5	70-130			
Xylenes (total)	28.0	1.0	µg/L	30.0		93.3	0-200			
Surrogate: 1,2-Dichloroethane-d4	24.7		µg/L	25.0		98.8	70-130			
Surrogate: Toluene-d8	25.1		µg/L	25.0		100	70-130			
Surrogate: 4-Bromofluorobenzene	24.9		µg/L	25.0		99.4	70-130			

LCS Dup (B265753-BSD1)

Prepared & Analyzed: 09/03/20

Acetone	121	50	µg/L	100		121	70-160	12.2	25	†
Acrylonitrile	9.29	5.0	µg/L	10.0		92.9	70-130	5.30	25	
tert-Amyl Methyl Ether (TAME)	8.57	0.50	µg/L	10.0		85.7	70-130	0.117	25	V-05
Benzene	8.90	1.0	µg/L	10.0		89.0	70-130	1.01	25	
Bromobenzene	9.41	1.0	µg/L	10.0		94.1	70-130	1.82	25	
Bromochloromethane	8.86	1.0	µg/L	10.0		88.6	70-130	0.225	25	
Bromodichloromethane	9.64	0.50	µg/L	10.0		96.4	70-130	1.25	25	
Bromoform	10.0	1.0	µg/L	10.0		100	70-130	3.15	25	
Bromomethane	5.37	2.0	µg/L	10.0		53.7	40-160	4.57	25	†
2-Butanone (MEK)	91.5	20	µg/L	100		91.5	40-160	6.65	25	†
tert-Butyl Alcohol (TBA)	84.2	20	µg/L	100		84.2	40-160	0.907	25	†
n-Butylbenzene	9.04	1.0	µg/L	10.0		90.4	70-130	4.76	25	
sec-Butylbenzene	9.69	1.0	µg/L	10.0		96.9	70-130	2.30	25	
tert-Butylbenzene	9.58	1.0	µg/L	10.0		95.8	70-130	3.61	25	
tert-Butyl Ethyl Ether (TBEE)	8.19	0.50	µg/L	10.0		81.9	70-130	0.609	25	V-05
Carbon Disulfide	9.31	5.0	µg/L	10.0		93.1	70-130	6.75	25	
Carbon Tetrachloride	9.02	5.0	µg/L	10.0		90.2	70-130	0.221	25	
Chlorobenzene	10.1	1.0	µg/L	10.0		101	70-130	1.69	25	
Chlorodibromomethane	9.57	0.50	µg/L	10.0		95.7	70-130	1.58	25	
Chloroethane	9.98	2.0	µg/L	10.0		99.8	70-130	1.62	25	
Chloroform	9.46	2.0	µg/L	10.0		94.6	70-130	1.60	25	
Chloromethane	12.0	2.0	µg/L	10.0		120	40-160	0.0837	25	V-20 †
2-Chlorotoluene	9.72	1.0	µg/L	10.0		97.2	70-130	2.71	25	
4-Chlorotoluene	9.69	1.0	µg/L	10.0		96.9	70-130	3.57	25	
1,2-Dibromo-3-chloropropane (DBCP)	9.16	5.0	µg/L	10.0		91.6	70-130	5.15	25	
1,2-Dibromoethane (EDB)	9.84	0.50	µg/L	10.0		98.4	70-130	0.919	25	
Dibromomethane	9.35	1.0	µg/L	10.0		93.5	70-130	0.533	25	
1,2-Dichlorobenzene	10.2	1.0	µg/L	10.0		102	70-130	4.73	25	
1,3-Dichlorobenzene	10.4	1.0	µg/L	10.0		104	70-130	3.52	25	
1,4-Dichlorobenzene	9.67	1.0	µg/L	10.0		96.7	70-130	3.15	25	
trans-1,4-Dichloro-2-butene	10.2	2.0	µg/L	10.0		102	70-130	2.07	25	
Dichlorodifluoromethane (Freon 12)	8.72	2.0	µg/L	10.0		87.2	40-160	1.74	25	†
1,1-Dichloroethane	8.95	1.0	µg/L	10.0		89.5	70-130	2.65	25	
1,2-Dichloroethane	9.69	1.0	µg/L	10.0		96.9	70-130	3.89	25	
1,1-Dichloroethylene	9.53	1.0	µg/L	10.0		95.3	70-130	3.00	25	
cis-1,2-Dichloroethylene	9.14	1.0	µg/L	10.0		91.4	70-130	0.763	25	
trans-1,2-Dichloroethylene	9.01	1.0	µg/L	10.0		90.1	70-130	0.111	25	
1,2-Dichloropropane	9.43	1.0	µg/L	10.0		94.3	70-130	1.60	25	
1,3-Dichloropropane	9.25	0.50	µg/L	10.0		92.5	70-130	0.325	25	
2,2-Dichloropropane	8.72	1.0	µg/L	10.0		87.2	40-130	2.49	25	†

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B265753 - SW-846 5030B										
LCS Dup (B265753-BSD1)										
Prepared & Analyzed: 09/03/20										
1,1-Dichloropropene	8.22	2.0	µg/L	10.0		82.2	70-130	0.485	25	
cis-1,3-Dichloropropene	8.91	0.50	µg/L	10.0		89.1	70-130	1.67	25	
trans-1,3-Dichloropropene	9.19	0.50	µg/L	10.0		91.9	70-130	0.651	25	
Diethyl Ether	9.84	2.0	µg/L	10.0		98.4	70-130	2.21	25	
Diisopropyl Ether (DIPE)	8.98	0.50	µg/L	10.0		89.8	70-130	1.22	25	
1,4-Dioxane	90.0	50	µg/L	100		90.0	40-130	8.87	50	† ‡
Ethylbenzene	9.67	1.0	µg/L	10.0		96.7	70-130	2.20	25	
Hexachlorobutadiene	10.6	0.60	µg/L	10.0		106	70-130	1.62	25	
2-Hexanone (MBK)	89.1	10	µg/L	100		89.1	70-160	6.14	25	†
Isopropylbenzene (Cumene)	9.90	1.0	µg/L	10.0		99.0	70-130	2.87	25	
p-Isopropyltoluene (p-Cymene)	9.49	1.0	µg/L	10.0		94.9	70-130	4.53	25	
Methyl Acetate	9.54	1.0	µg/L	10.0		95.4	70-130	1.37	25	
Methyl tert-Butyl Ether (MTBE)	9.23	1.0	µg/L	10.0		92.3	70-130	1.42	25	
Methyl Cyclohexane	9.32	1.0	µg/L	10.0		93.2	70-130	0.107	25	
Methylene Chloride	9.93	5.0	µg/L	10.0		99.3	70-130	0.505	25	
4-Methyl-2-pentanone (MIBK)	86.4	10	µg/L	100		86.4	70-160	2.07	25	†
Naphthalene	8.88	2.0	µg/L	10.0		88.8	40-130	6.51	25	†
n-Propylbenzene	9.70	1.0	µg/L	10.0		97.0	70-130	4.21	25	
Styrene	9.65	1.0	µg/L	10.0		96.5	70-130	0.519	25	
1,1,1,2-Tetrachloroethane	10.3	1.0	µg/L	10.0		103	70-130	4.96	25	
1,1,2,2-Tetrachloroethane	10.5	0.50	µg/L	10.0		105	70-130	4.76	25	
Tetrachloroethylene	9.85	1.0	µg/L	10.0		98.5	70-130	3.30	25	
Tetrahydrofuran	8.96	10	µg/L	10.0		89.6	70-130	1.22	25	
Toluene	9.39	1.0	µg/L	10.0		93.9	70-130	0.106	25	
1,2,3-Trichlorobenzene	9.34	5.0	µg/L	10.0		93.4	70-130	5.16	25	
1,2,4-Trichlorobenzene	9.50	1.0	µg/L	10.0		95.0	70-130	3.64	25	
1,3,5-Trichlorobenzene	9.85	1.0	µg/L	10.0		98.5	70-130	5.53	25	
1,1,1-Trichloroethane	9.18	1.0	µg/L	10.0		91.8	70-130	1.08	25	
1,1,2-Trichloroethane	9.92	1.0	µg/L	10.0		99.2	70-130	1.01	25	
Trichloroethylene	9.63	1.0	µg/L	10.0		96.3	70-130	0.104	25	
Trichlorofluoromethane (Freon 11)	9.04	2.0	µg/L	10.0		90.4	70-130	0.221	25	
1,2,3-Trichloropropane	9.24	2.0	µg/L	10.0		92.4	70-130	0.647	25	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.4	1.0	µg/L	10.0		104	70-130	1.80	25	
1,2,4-Trimethylbenzene	9.16	1.0	µg/L	10.0		91.6	70-130	3.67	25	
1,3,5-Trimethylbenzene	9.59	1.0	µg/L	10.0		95.9	70-130	5.90	25	
Vinyl Chloride	8.38	2.0	µg/L	10.0		83.8	40-160	1.68	25	†
m+p Xylene	19.0	2.0	µg/L	20.0		95.1	70-130	2.50	25	
o-Xylene	9.97	1.0	µg/L	10.0		99.7	70-130	5.36	25	
Xylenes (total)	29.0	1.0	µg/L	30.0		96.6	0-200	3.47		
Surrogate: 1,2-Dichloroethane-d4	24.3		µg/L	25.0		97.3	70-130			
Surrogate: Toluene-d8	25.0		µg/L	25.0		100	70-130			
Surrogate: 4-Bromofluorobenzene	25.3		µg/L	25.0		101	70-130			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
RL-11	Elevated reporting limit due to high concentration of target compounds.
V-05	Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.
V-20	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8260C-D in Water</i>	
Acetone	CT,ME,NH,VA,NY
Acrylonitrile	CT,ME,NH,VA,NY
tert-Amyl Methyl Ether (TAME)	ME,NH,VA,NY
Benzene	CT,ME,NH,VA,NY
Bromobenzene	ME,NY
Bromochloromethane	ME,NH,VA,NY
Bromodichloromethane	CT,ME,NH,VA,NY
Bromoform	CT,ME,NH,VA,NY
Bromomethane	CT,ME,NH,VA,NY
2-Butanone (MEK)	CT,ME,NH,VA,NY
tert-Butyl Alcohol (TBA)	ME,NH,VA,NY
n-Butylbenzene	ME,VA,NY
sec-Butylbenzene	ME,VA,NY
tert-Butylbenzene	ME,VA,NY
tert-Butyl Ethyl Ether (TBEE)	ME,NH,VA,NY
Carbon Disulfide	CT,ME,NH,VA,NY
Carbon Tetrachloride	CT,ME,NH,VA,NY
Chlorobenzene	CT,ME,NH,VA,NY
Chlorodibromomethane	CT,ME,NH,VA,NY
Chloroethane	CT,ME,NH,VA,NY
Chloroform	CT,ME,NH,VA,NY
Chloromethane	CT,ME,NH,VA,NY
2-Chlorotoluene	ME,NH,VA,NY
4-Chlorotoluene	ME,NH,VA,NY
1,2-Dibromo-3-chloropropane (DBCP)	ME,NY
1,2-Dibromoethane (EDB)	ME,NY
Dibromomethane	ME,NH,VA,NY
1,2-Dichlorobenzene	CT,ME,NH,VA,NY
1,3-Dichlorobenzene	CT,ME,NH,VA,NY
1,4-Dichlorobenzene	CT,ME,NH,VA,NY
trans-1,4-Dichloro-2-butene	ME,NH,VA,NY
Dichlorodifluoromethane (Freon 12)	ME,NH,VA,NY
1,1-Dichloroethane	CT,ME,NH,VA,NY
1,2-Dichloroethane	CT,ME,NH,VA,NY
1,1-Dichloroethylene	CT,ME,NH,VA,NY
cis-1,2-Dichloroethylene	ME,NY
trans-1,2-Dichloroethylene	CT,ME,NH,VA,NY
1,2-Dichloropropane	CT,ME,NH,VA,NY
1,3-Dichloropropane	ME,VA,NY
2,2-Dichloropropane	ME,NH,VA,NY
1,1-Dichloropropene	ME,NH,VA,NY
cis-1,3-Dichloropropene	CT,ME,NH,VA,NY
trans-1,3-Dichloropropene	CT,ME,NH,VA,NY
Diethyl Ether	ME,NY
Diisopropyl Ether (DIPE)	ME,NH,VA,NY
1,4-Dioxane	ME,NY
Ethylbenzene	CT,ME,NH,VA,NY

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8260C-D in Water</i>	
Hexachlorobutadiene	CT,ME,NH,VA,NY
2-Hexanone (MBK)	CT,ME,NH,VA,NY
Isopropylbenzene (Cumene)	ME,VA,NY
p-Isopropyltoluene (p-Cymene)	CT,ME,NH,VA,NY
Methyl Acetate	ME,NY
Methyl tert-Butyl Ether (MTBE)	CT,ME,NH,VA,NY
Methyl Cyclohexane	NY
Methylene Chloride	CT,ME,NH,VA,NY
4-Methyl-2-pentanone (MIBK)	CT,ME,NH,VA,NY
Naphthalene	ME,NH,VA,NY
n-Propylbenzene	CT,ME,NH,VA,NY
Styrene	CT,ME,NH,VA,NY
1,1,1,2-Tetrachloroethane	CT,ME,NH,VA,NY
1,1,2,2-Tetrachloroethane	CT,ME,NH,VA,NY
Tetrachloroethylene	CT,ME,NH,VA,NY
Toluene	CT,ME,NH,VA,NY
1,2,3-Trichlorobenzene	ME,NH,VA,NY
1,2,4-Trichlorobenzene	CT,ME,NH,VA,NY
1,3,5-Trichlorobenzene	ME
1,1,1-Trichloroethane	CT,ME,NH,VA,NY
1,1,2-Trichloroethane	CT,ME,NH,VA,NY
Trichloroethylene	CT,ME,NH,VA,NY
Trichlorofluoromethane (Freon 11)	CT,ME,NH,VA,NY
1,2,3-Trichloropropane	ME,NH,VA,NY
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	VA,NY
1,2,4-Trimethylbenzene	ME,VA,NY
1,3,5-Trimethylbenzene	ME,VA,NY
Vinyl Chloride	CT,ME,NH,VA,NY
m+p Xylene	CT,ME,NH,VA,NY
o-Xylene	CT,ME,NH,VA,NY
Xylenes (total)	ME,NY

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The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2021
CT	Connecticut Department of Public Health	PH-0567	09/30/2021
NY	New York State Department of Health	10899 NELAP	04/1/2021
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2021
RI	Rhode Island Department of Health	LAO00112	12/30/2020
NC	North Carolina Div. of Water Quality	652	12/31/2020
NJ	New Jersey DEP	MA007 NELAP	06/30/2021
FL	Florida Department of Health	E871027 NELAP	06/30/2021
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2021
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2020
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2021
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2021
NC-DW	North Carolina Department of Health	25703	07/31/2021
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2021
MI	Dept. of Env, Great Lakes, and Energy	9100	10/1/2020

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 - Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Aptm Environmental
 Received By [Signature] Date 9/2/20 Time 1730

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 1 Actual Temp 4.4
 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? na Were Samples Tampered with? na
 Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____

Is there enough Volume? T
 Is there Headspace where applicable? T MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? T On COC? T
 Do all samples have the proper pH? _____ Acid na Base na

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-	5	500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments: