August 20, 2021
Coneco Project No. 3395.1.003

Mr. Rick Lincoln
Shinglemill LLC
4 First Street
Bridgewater, Massachusetts 02324

RE: **Groundwater Sampling Summary Letter**
Shinglemill Apartments
75-79 Pond Street
Rockland, Massachusetts

Dear Mr. Lincoln:

Coneco Engineers & Scientists, Incorporated (Coneco) presents the following summary of environmental sampling activities and analytical results for the above-referenced property, hereinafter, the "Site." The location of the Site is depicted on Figure 1 and pertinent Site features, including groundwater monitoring well and test pit sampling locations, are depicted on Figure 2, appended to this report for reference.

According to the Rockland Assessor's Office, the Site consists of one 28.6-acre parcel of land identified as 75-79 Pond Street in Rockland, Massachusetts. The Site currently consists of undeveloped wooded land in a mixed-use residential and commercial portion of Rockland, Massachusetts. Shinglemill LLC is planning to develop a multi-tenant residential apartment complex at the Site. Three previously-installed monitoring wells, identified as WELL-1, WELL-2, and WELL-3, are located in the southern portion of the Site. Photographs of the monitoring wells are appended to this report for reference.

Groundwater Sampling

Coneco conducted groundwater sampling activities at the Site on April 4, 2019 and July 15, 2021. Groundwater sampling on April 4, 2019 was limited to the collection of a sample from monitoring well WELL-1 (identified at that time as MW-01). The April 2019 groundwater sample collected from WELL-1 was submitted to Con-Test Analytical Laboratory, a Massachusetts and National Environmental Laboratory Accreditation Program (NELAP)-certified analytical laboratory located in East Longmeadow, Massachusetts, to be analyzed for volatile organic compounds (VOCs) by the United States Environmental Protection Agency (EPA) Method 8260, dissolved and total iron, manganese, and arsenic, nitrate, nitrite, coliform bacteria, radionuclides, conductivity, pH, and hardness. The groundwater sample was preserved as follows: VOC in 40-milliliter (mL) VOA vials preserved with hydrochloric acid (HCl); dissolved and total metals in 250-mL plastic containers preserved with nitric acid; nitrate, nitrite, pH, and conductivity in a 1-L plastic unpreserved container; radionuclides in a 1-L plastic container preserved with nitric acid; coliform bacteria in 100-mL sterile plastic containers; and hardness in a 500-mL plastic container preserved with HCl, in accordance with standard field collection and preservation techniques. Samples were either kept on ice

in a cooler or in a refrigerator cooled to 4 degrees Celsius during transport from the field to the laboratory. Laboratory analytical documentation is appended for reference.

Prior to groundwater sampling activities on July 15, 2021, Coneco utilized a Solinst® water level indicator to gauge pre-existing monitoring wells WELL-1, WELL-2, and WELL-3 for depth to groundwater. Depth to water was measured ranging from 2.03 to 4.19 feet below surface grade in the monitoring wells. No non-aqueous phase liquid was observed in the wells during the gauging and sampling activities. Groundwater quality parameters were measured during sampling using an Oakton® Multi-Parameter Meter. A summary of the groundwater field screening measurements is included in Table 1. Groundwater sampling field sheets are enclosed for reference. Monitoring well locations are depicted on Figure 2.

Table 1 - Tabulation of Groundwater Monitoring Well Data: July 15, 2021

Monitoring Well	Depth to Water	Well Depth	Temperature	pH	Conductivity
WELL-1	3.21	--	18.1	8.14	1,128
WELL-2	4.19	15.08	20.8	5.71	163
WELL-3	2.03	--	22.4	9.93	222

Notes: 1) Gauging data presented in feet below surface grade.
2) Temperature presented in degrees Celsius.
3) Conductivity measured in microsiemens.
4) -- indicates well depth was not measured.

The groundwater samples collected from monitoring wells WELL-1, WELL-2, and WELL-3 on July 15, 2021 were submitted to Alpha Analytical, a Massachusetts and NELAP-certified analytical laboratory located in Mansfield, Massachusetts, to be analyzed for Per- and Polyfluoroalkyl Substances (PFAS) by EPA Method 537.1. The groundwater samples were preserved in 250-mL plastic containers in accordance with standard field collection and preservation techniques. Samples were either kept on ice in a cooler or in a refrigerator cooled to 4 degrees Celsius during transport from the field to the laboratory. Laboratory analytical documentation is appended for reference. Laboratory analytical results for the groundwater samples collected on April 4, 2019 and July 15, 2021 are presented in Table 2.

Table 2 - Groundwater Analytical Results (Detected Analytes Only)

Analyte	WELL-1/ MW-01	WELL-2	WELL-3	RCGW-1
April 4, 2019				
VOCs by EPA Method 8260 (µg/L)				
Acetone	26	--	--	6,300
Bromodichloromethane	1.1	--	--	3
Chlorodibromomethane	0.60	--	--	2
Chloroform	7.3	--	--	50
Chloromethane	3.6	--	--	1,000
Total Metals (µg/L)				
Iron	17,000	--	--	NS
Manganese	160	--	--	NS
Dissolved Metals (µg/L)				
Arsenic	1.1	--	--	10
Iron	1,800	--	--	NS
Manganese	25	--	--	NS
July 15, 2021				
PFAS by EPA Method 537.1 (ng/L)				
Perfluorohexanoic acid (PFHxA)	<1.89	<1.88	2.63	NS
Perfluorohexanesulfonic acid (PFHxS)*	2.20	<1.88	<1.86	*See ∑ below*
Perfluorooctanoic acid (PFOA)*	2.78	2.78	3.36	*See ∑ below*
Perfluorooctanesulfonic acid (PFOS)*	3.52	8.03	1.97	*See ∑ below*
∑ regulated PFAS compounds	*8.5*	*10.81*	*5.33*	*20*

Notes:
1) RCGW-1 RCs are listed in 310 CMR 40.1600.
2) Analytical results and RCs are reported in micrograms per liter (µg/L) or nanograms per liter (ng/L) as indicated.
3) -- indicates well not analyzed for specified analyte.
4) NS indicates that a Reportable Concentration has not been promogulated for the specified analyte.
5) < indicates the analyte was not detected above the specified laboratory quantification limit.
6) Analytes with an asterisk (*) indicate compounds regulated by the MassDEP, which include PFDA, PFHpA, PFHxS, PFNA, PFOS and PFOA.

Laboratory analysis of the groundwater sample collected from WELL-1 on April 4, 2019 did not identify concentrations of analyzed compounds exceeding the applicable RCGW-1 Reportable Concentrations (RCs). Laboratory analysis of the groundwater samples collected from the on-Site monitoring wells on July 15, 2021 did not identify total concentrations of the MassDEP regulated PFAS compounds exceeding the applicable RCGW-1 RC.

Test Pit Advancement

On October 2 and 3, 2019, Coneco oversaw the excavation of fifteen (15) test pits throughout the Site, designated TP-1 through TP-15. Test pit locations were selected to facilitate a geotechnical evaluation of the sub-strata and observation of environmental conditions. The

test pits were advanced to depths ranging from 7.5 to 11 feet below grade. Groundwater was encountered in the test pits at depths ranging from 3 to 10 feet below grade.

Observations made during the performance of test pit advancement indicated the presence of overburden stratigraphy comprised primarily of loam and sand. Coneco did not note olfactory or visual evidence of a potential release of oil or hazardous material (OHM) at the Site during the advancement of the test pits. Based on visual and olfactory observations made during the completion of the exploratory test pits, Coneco did not submit soil samples for laboratory analysis.

Analytical Data Quality Assurance and Quality Control

Coneco has reviewed laboratory procedures, field sample Quality Assurance/Quality Control (QA/QC), and laboratory reporting requirements for analytical data used in support of assessment and evaluation decisions at the Site pursuant to MassDEP's *Compendium of Quality Assurance and Quality Control Requirements and Performance Standards for Selected Analytical Methods Used in Support of Response Actions for the Massachusetts Contingency Plan* (MassDEP Publication WSC-02-320). This Compendium of Analytical Methods (CAM) provides (a) information and guidance to all parties on analytical and data quality issues, and (b) requirements and specifications for those parties who wish to obtain "Presumptive Certainty" for satisfying the data quality requirements of the Massachusetts Contingency Plan (MCP) at 310 CMR 40.0017 and 310 CMR 40.0191(2)(c).

Groundwater sample collection, preservation, and logging procedures at the Site were conducted in accordance with Coneco's standard operating procedures, the *Standard Reference for Monitoring Wells,* the CAM guidelines, and the MCP. Laboratory procedures conducted by Con-Test and Alpha included method-specific QA/QC requirements and performance standards. Coneco's review of laboratory documentation, including analytical results, narratives, and chain-of-custodies provided by Con-Test and Alpha for groundwater samples collected from the Site, identified no departures from the requirements specified at 310 CMR 40.0017 and 40.0191.

Coneco evaluated information provided by Con-Test and Alpha concerning sample integrity, chain-of-custody procedures, quality assurance and quality control, necessary report components, and identified QA/QC flags for the submitted groundwater samples. Details regarding any identified non-conformances can be found in the appended laboratory analytical documentation.

It is Coneco's opinion that the presented laboratory data are compliant with the applicable MCP Analytical Method standards and laboratory QC requirements. As such, these data are considered to be usable without adjustment for Site Characterization decisions made pursuant to 310 CMR 40.0000.

Groundwater Reporting Category

In accordance with 310 CMR 40.0362, groundwater at the Site is classified as either RCGW-1 or RCGW-2 based on the criteria presented in Table 3. The groundwater classification evaluation for the Site is based upon a MassDEP Phase I Site Assessment Map,

included for reference as Figure 3, information available from the Town of Rockland Board of Health and the MassDEP well search program.

Table 3 - RCGW-1 Reporting Categories for Groundwater

RCGW-1 Criteria	RCGW-1 Classification
1) Within the Zone II for a public water supply and/or Town Water Protection District?	No
2) Within an Interim Wellhead Protection Area	No
3) Within a Potentially Productive Aquifer	**Yes**
4) Within the Zone A of a Class A surface water body used as a public water supply	**Yes**
5) At any point located 500 or more feet from a public water supply distribution pipeline unless the groundwater is located under a parcel of land where any portion of that parcel is less than 500 feet from a public water supply distribution pipeline.	No
6) Within a Municipal Aquifer Protection District	No
7) At any groundwater sampling point located within 500 feet of a private water supply well	No

Note: Reporting Category for groundwater based on 310 CMR 40.0362.

Portions of the Site, including the locations of the groundwater monitoring wells are located within a medium-yield potentially productive aquifer. Portions of the Site, not including the locations of the monitoring wells, are also located within the boundaries of a Zone A Public Water Supply Protection Area. As such, groundwater at the Site is subject to the RCGW-1 classification.

Findings and Conclusions

No visual or olfactory evidence of a release of OHM to subsurface soil was observed in the fifteen test pits advanced throughout the Site in October 2019. As concentrations of analyzed compounds in the groundwater samples collected from the on-Site monitoring wells in 2019 and 2021 do not exceed the applicable RCGW-1 Reportable Concentrations (RCs), there is currently no indication that a significant release of oil and/or hazardous materials to groundwater has occurred at the Site. As such, it is the opinion of Coneco that, based on observation of soil conditions and the groundwater analytical data collected for the Site and summarized herein, no reportable release condition exists at the Site and no further action is required or recommended at this time with regard to the environmental conditions at the Site.

If you have any questions concerning this submittal, please feel free to contact the undersigned.

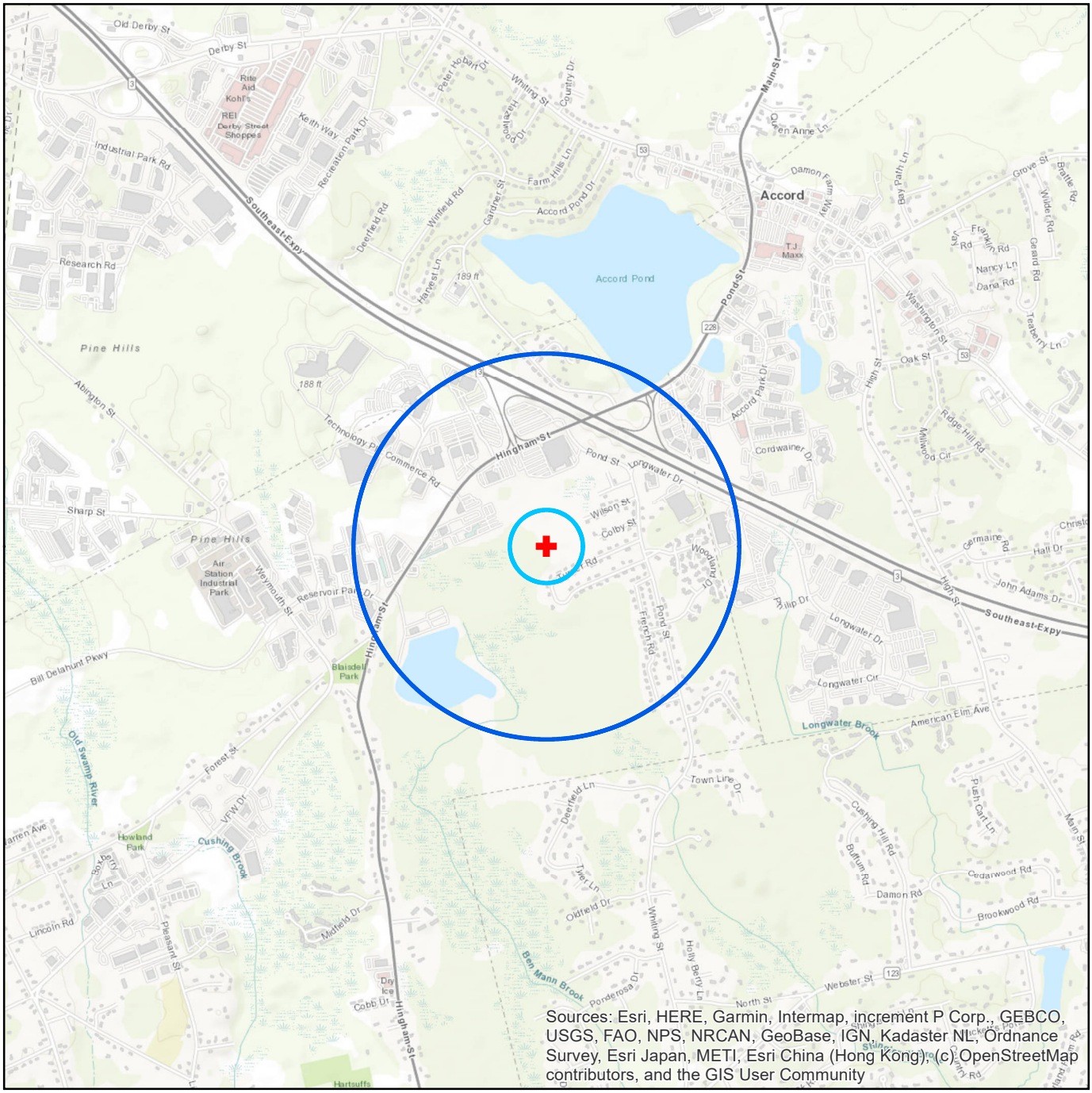
Respectfully Submitted,
Coneco Engineers & Scientists, Incorporated

Deirdre C. Kearney
Environmental Scientist

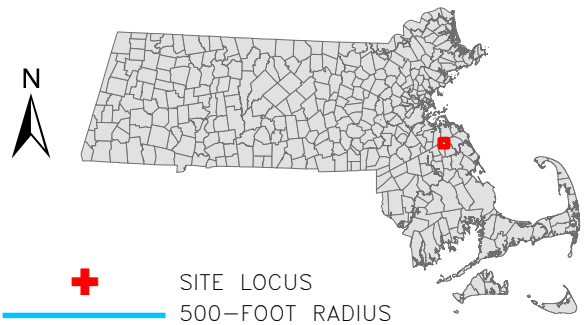
Brian F. Klingler, PG, LSP
Principal Geologist

DCK:MEB:BFK;jw
X:\\3395.1.003_Groundwater Sampling Summary.docx

ATTACHMENTS:
Figure 1 - Site Locus
Figure 2 - Aerial Image
Figure 3 - MassDEP Phase I Site Assessment Map
Photographs
Groundwater Sampling Field Sheets
Laboratory Analytical Documentation



LATITUDE: 42.16117° LONGITUDE: −70.89530°
UTM: 4,669,409 N 343,430 E (Zone 19)



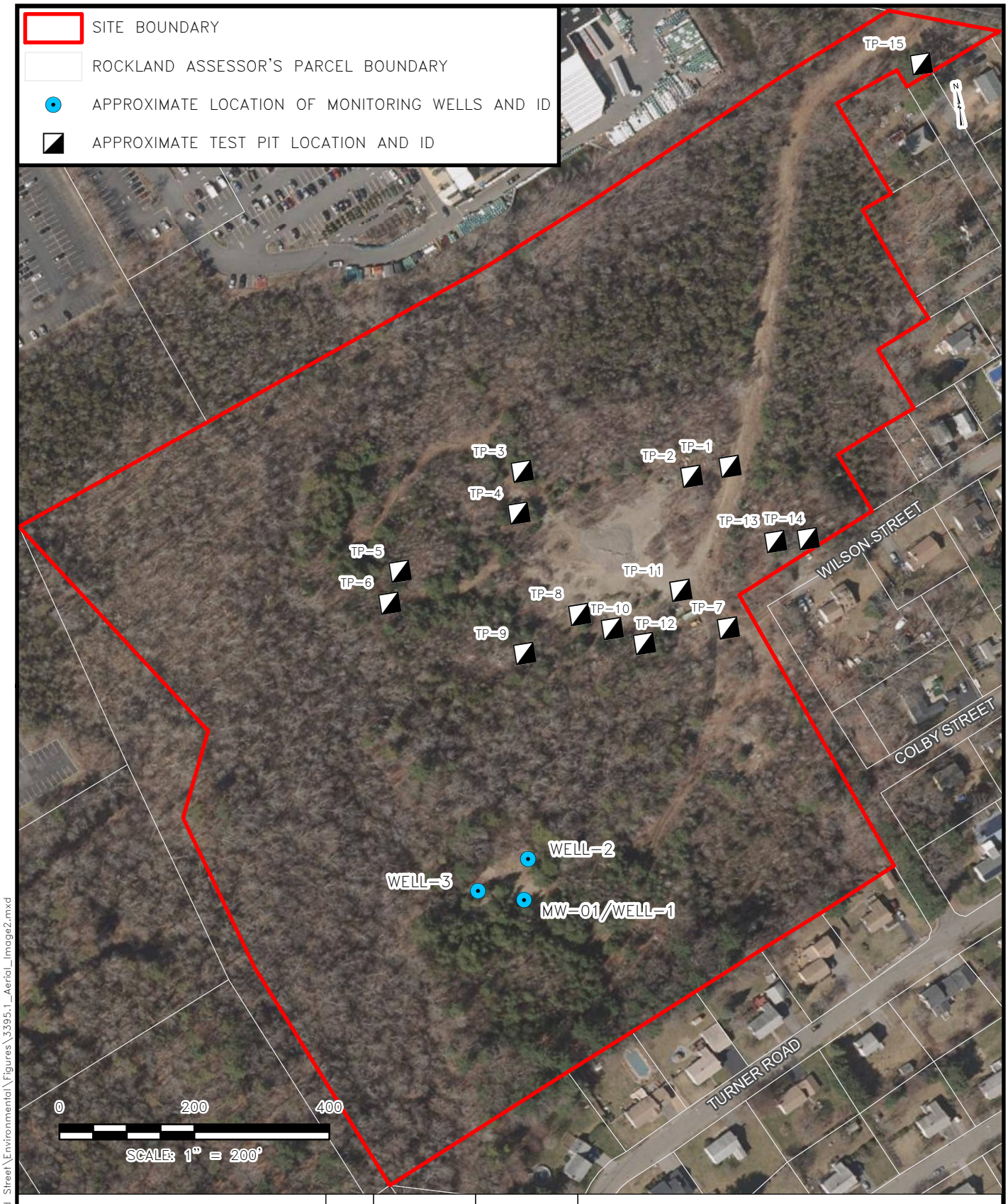
SITE LOCUS
500−FOOT RADIUS
0.5−MILE RADIUS

CONECO
Engineers & Scientists
www.coneco.com

SITE LOCUS MAP

SHINGLEMILL APARTMENTS
75−79 POND STREET
ROCKLAND, MASSACHUSETTS

SCALE	PROJECT NO.	DRAWING NUMBER
1:25000	3395.1.003	FIGURE 1



	DRAWN	CHECKED
BY	WRA	BFK
DATE	8/18/2021	8/19/2021
PROJECT NO. 3395.1.003		

CONECO Engineers & Scientists
www.coneco.com

SHINGLEMILL APARTMENTS
75-79 POND STREET
ROCKLAND, MASSACHUSETTS

FIGURE 2 – AERIAL IMAGE

X:\Rockland\3395.1 - 0 Pond Street\Environmental\Figures\3395.1_Aerial_Image2.mxd

THIS DOCUMENT IS INTENDED FOR GENERAL PLANNING & INFORMATION PURPOSES ONLY. ALL MEASUREMENTS & LOCATIONS ARE APPROXIMATE.

MassDEP - Bureau of Waste Site Cleanup

Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

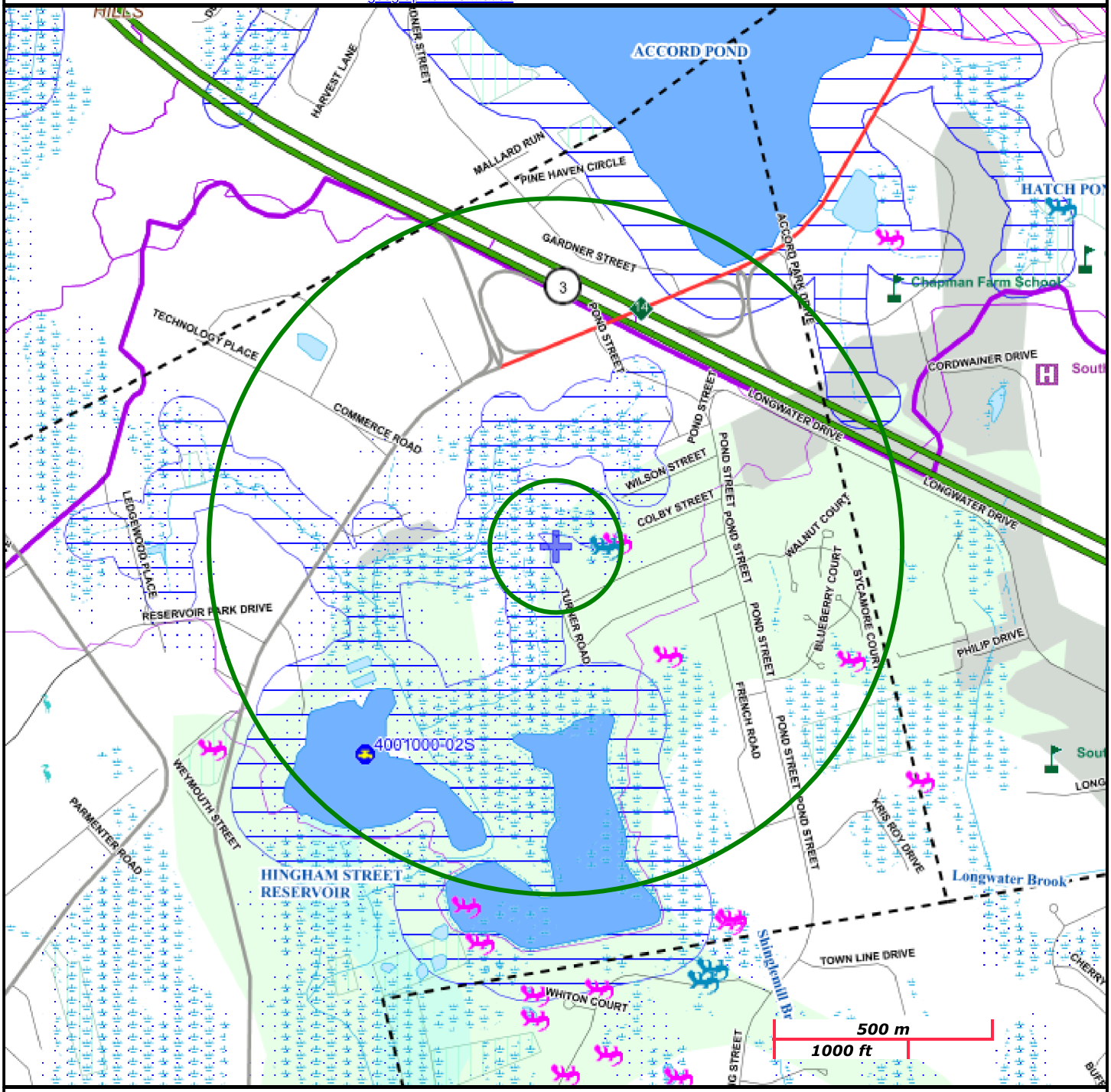
Site Information:

75-79 POND STREET ROCKLAND, MA

NAD83 UTM Meters:
4669403mN , 343430mE (Zone: 19)
January 20, 2022

The information shown is the best available at the date of printing. However, it may be incomplete. The responsible party and LSP are ultimately responsible for ascertaining the true conditions surrounding the site. Metadata for data layers shown on this map can be found at: https://www.mass.gov/orgs/massgis-bureau-of-geographic-information.

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail

Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct

Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam

Aquifers: Medium Yield, High Yield, EPA Sole Source

Non Potential Drinking Water Source Area: Medium, High (Yield)

PWS Protection Areas: Zone II, IWPA, Zone A

Hydrography: Open Water, PWS Reservoir, Tidal Flat

Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential

Solid Waste Landfill; PWS: Com.GW,SW, Emerg., Non-Com.

DRAWING NUMBER

FIGURE 3

Photo 1
View of MW-01/WELL-1 as viewed from the east (location of steel well casing indicated by red arrow).

Photo 2
View of WELL-2 as viewed from the north (stick-up well location indicated by red arrow).

Photo 3
View of WELL-3 as viewed from the northeast (location of steel well casing indicated by red arrow).

CONECO Engineers & Scientists OFFICES THROUGHOUT NEW ENGLAND (800) 548-3355			PHOTOGRAPHS SHINGLEMILL APARTMENTS 75-79 POND STREET ROCKLAND, MASSACHUSETTS
PHOTOGRAPHER	DATE	CHECKED	
DCK	7/15/2021	MEB	CONECO PROJECT NO. 3395.1.003

CONECO ENGINEERS & SCIENTISTS	GROUNDWATER SAMPLING RECORD

PROJECT: 3395.1
LOCATION: 75-79 Pond Street, Rockland, Massachusetts
SAMPLED BY: Deirdre Kearney

WELL ID: MW-01
DATE: 4/4/2019
TIME: 0900

WELL INTEGRITY

	NA	YES	NO
Protective casing secure	☐	■	☐
Concrete collar intact	■	☐	☐
PVC stick-up intact	■	☐	☐
Well cap present	☐	☐	■
Security lock present	☐	■	☐

PID SCREENING (ppmV) (if required)
Background: NA
Well mouth: NA

PROTECTIVE CASING STICK-UP FROM GROUND (ft): Not Measured

RISER STICK-UP FROM GROUND (ft): NA

WELL DIAMETER
☐ 1 inch
☐ 1.5 inch
☐ 2 inch
☐ 4 inch
☐ _____

WELL MATERIAL
☐ PVC ■ SS
☐ _____

WELL DEPTH: Not Measured
DEPTH TO WATER: Not Measured
DEPTH TO NAPL: NA feet
NAPL THICKNESS: NA feet
Confirmed w/ bailer? No
Notes:

REFERENCE POINT
☐ Top of riser
☐ Top of casing
☐ Pen mark
☐ North
☐

DEPTH OF PUMP INTAKE: 10 feet
WATER COLUMN HEIGHT: Not measured
VOLUME OF WATER IN WELL: Not measured
VOLUME OF WATER PURGED: 5.0 gallons
DESCRIBE PURGE WATER MANAGEMENT: Water containted in a 5-gallon bucket and poured adjacent to well following sampling

Volume calc:
☐ .041 gal/ft (1 in)
☐ .092 gal/ft (1.5 in)
☐ .16 gal/ft (2 in)
☐ .65 gal/ft (4 in)
☐ 1.5 gal/ft (6 in)
☐ ____ gal/ft (____ in)

Note: Volume = pi x ([radius in feet]^2) x (height in feet) x (7.48 gallons / 1 cubic foot)

FIELD WATER QUALITY MEASUREMENTS

Time	0955				
Volume Purged (gallons)	5.0				
Temperature (°C)					
Conductivity (µmhos/cm)					
pH (Std. units)					
Flow (ml/min)					
Depth to water (ft)					

SAMPLER TYPE

	Purge	Sample
Bailer	☐	☐
Peristaltic Pump	■	■
Submersible Pump	☐	☐
Bladder pump	☐	☐
Other: _____	☐	☐

DESCRIPTION OF SAMPLING EQUIPMENT (MODEL AND S/N)
Geopump Peristaltic Pump

Analytical Parameter	Filtered (Y/N)	Preservation	Volume/Containers	Time Collected	Date Collected
VOCs	N	HCl	(3) 40-mL VOAs	1000	4/4/2019
Dissolved Metals	Y	HNO_3	(1) 250-mL Poly	1000	4/4/2019
Total Metals	N	HNO_3	(1) 250-mL Poly	1000	4/4/2019
Nitrate and Nitrite	N	Ice	(1) 1-L Poly	1000	4/4/2019
Radionuclides	N	HNO_3	(1) 1-L Poly	1000	4/4/2019
Coliform Bacteria	N	Ice	(1) Sterile Cup	1000	4/4/2019
pH and Conductivity	N	Ice	(1) 1-L Poly	1000	4/4/2019
Hardness	N	HCl	(1) 250-mL Poly	1000	4/4/2019

CONECO ENGINEERS & SCIENTISTS	GROUNDWATER SAMPLING RECORD

PROJECT: 3395.1
LOCATION: 75-79 Pond Street, Rockland, Massachusetts
SAMPLED BY: Deirdre Kearney

WELL ID: WELL-1
DATE: 7/15/2021
TIME: 1115

WELL INTEGRITY

	NA	YES	NO
Protective casing secure	☐	■	☐
Concrete collar intact	■	☐	☐
PVC stick-up intact	■	☐	☐
Well cap present	☐	☐	■
Security lock present	☐	■	☐

PID SCREENING (ppmV) (if required)
Background: NA
Well mouth: NA

PROTECTIVE CASING STICK-UP
FROM GROUND (ft): 1.55

RISER STICK-UP
FROM GROUND (ft): NA

WELL DIAMETER
☐ 1 inch
☐ 1.5 inch
☐ 2 inch
☐ 4 inch
☐ _____

WELL MATERIAL
☐ PVC ■ SS
☐ _____

WELL DEPTH: Not Measured
DEPTH TO WATER: 3.21 feet
DEPTH TO NAPL: NA feet
NAPL THICKNESS: NA feet
Confirmed w/ bailer? No
Notes: Well was too deep to be measured

DEPTH OF PUMP INTAKE: 10 feet
WATER COLUMN HEIGHT: Not measured
VOLUME OF WATER IN WELL: Not measured
VOLUME OF WATER PURGED: 5.0 gallons
DESCRIBE PURGE WATER MANAGEMENT: Water containted in a 5-gallon bucket and poured adjacent to well following sampling

Note: Volume = pi x ([radius in feet]^2) x (height in feet) x (7.48 gallons / 1 cubic foot)

REFERENCE POINT
☐ Top of riser
■ Top of casing
☐ Pen mark
☐ North
☐

Volume calc:
☐ .041 gal/ft (1 in)
☐ .092 gal/ft (1.5 in)
☐ .16 gal/ft (2 in)
☐ .65 gal/ft (4 in)
☐ 1.5 gal/ft (6 in)
☐ ____ gal/ft (____ in)

FIELD WATER QUALITY MEASUREMENTS

Time	1200				
Volume Purged (gallons)	5.0				
Temperature (°C)	181				
Conductivity (µmhos/cm)	1,128				
pH (Std. units)	814				
Flow (ml/min)					
Depth to water (ft)					

SAMPLER TYPE

	Purge	Sample
Bailer	☐	☐
Peristaltic Pump	■	■
Submersible Pump	☐	☐
Bladder pump	☐	☐
Other: _____	☐	☐

DESCRIPTION OF SAMPLING EQUIPMENT (MODEL AND S/N)
Solinist Oil/Water Indicator
Oakton® Multi-Parameter Meter
Geopump Peristaltic Pump

Analytical Parameter	Filtered (Y/N)	Preservation	Volume/Containers	Time Collected	Date Collected
PFAS	N	Ice	(2) 250-mL Poly	1205	7/15/2021

CONECO ENGINEERS & SCIENTISTS

GROUNDWATER SAMPLING RECORD

PROJECT: 3395.1
LOCATION: 75-79 Pond Street, Rockland, Massachusetts
SAMPLED BY: Deirdre Kearney

WELL ID: WELL-2
DATE: 7/15/2021
TIME: 1120

WELL INTEGRITY

	NA	YES	NO
Protective casing secure	☐	■	☐
Concrete collar intact	■	☐	☐
PVC stick-up intact	☐	■	☐
Well cap present	☐	■	☐
Security lock present	☐	☐	■

PID SCREENING (ppmV) (if required)
Background: NA
Well mouth: NA

PROTECTIVE CASING STICK-UP
FROM GROUND (ft): NA

RISER STICK-UP
FROM GROUND (ft): 2.20

WELL DIAMETER
☐ 1 inch
☐ 1.5 inch
■ 2 inch
☐ 4 inch
☐ _____

WELL MATERIAL
■ PVC ☐ SS
☐ _____

WELL DEPTH: 15.08 feet
DEPTH TO WATER: 4.19 feet
DEPTH TO NAPL: NA feet
NAPL THICKNESS: NA feet
Confirmed w/ bailer? No
Notes:

REFERENCE POINT
☐ Top of riser
☐ Top of casing
☐ Pen mark
☐ North
☐

DEPTH OF PUMP INTAKE: 9.5 feet
WATER COLUMN HEIGHT: 10.89 feet
VOLUME OF WATER IN WELL: 1.742 gallons
VOLUME OF WATER PURGED: 5.52 gallons
DESCRIBE PURGE WATER MANAGEMENT: Water containted in a 5-gallon bucket and poured adjacent to well following sampling

Volume calc:
☐ .041 gal/ft (1 in)
☐ .092 gal/ft (1.5 in)
■ .16 gal/ft (2 in)
☐ .65 gal/ft (4 in)
☐ 1.5 gal/ft (6 in)
☐ ____ gal/ft (____ in)

Note: Volume = pi x ([radius in feet]^2) x (height in feet) x (7.48 gallons / 1 cubic foot)

FIELD WATER QUALITY MEASUREMENTS

Time	1315				
Volume Purged (gallons)	8.0				
Temperature (°C)	20.8				
Conductivity (µmhos/cm)	163				
pH (Std. units)	5.71				
Flow (ml/min)					
Depth to water (ft)					

SAMPLER TYPE

	Purge	Sample
Bailer	☐	☐
Peristaltic Pump	■	■
Submersible Pump	☐	☐
Bladder pump	☐	☐
Other: _____	☐	☐

DESCRIPTION OF SAMPLING EQUIPMENT (MODEL AND S/N)
Solinist Oil/Water Indicator
Oakton® Multi-Parameter Meter
Geopump Peristaltic Pump

Analytical Parameter	Filtered (Y/N)	Preservation	Volume/Containers	Time Collected	Date Collected
PFAS	N	Ice	(2) 250-mL Poly	1320	7/15/2021

CONECO ENGINEERS & SCIENTISTS

GROUNDWATER SAMPLING RECORD

PROJECT: 3395.1
LOCATION: 75-79 Pond Street, Rockland, Massachusetts
SAMPLED BY: Deirdre Kearney

WELL ID: WELL-3
DATE: 7/15/2021
TIME: 1330

WELL INTEGRITY

	NA	YES	NO
Protective casing secure	☐	■	☐
Concrete collar intact	■	☐	☐
PVC stick-up intact	■	☐	☐
Well cap present	☐	☐	■
Security lock present	☐	■	☐

PID SCREENING (ppmV) (if required)
Background: NA
Well mouth: NA

PROTECTIVE CASING STICK-UP
FROM GROUND (ft): 2.03

RISER STICK-UP
FROM GROUND (ft): NA

WELL DIAMETER
☐ 1 inch
☐ 1.5 inch
☐ 2 inch
☐ 4 inch
☐ _____

WELL MATERIAL
☐ PVC ■ SS
☐ _____

WELL DEPTH: Not Measured
DEPTH TO WATER: 2.03 feet
DEPTH TO NAPL: NA feet
NAPL THICKNESS: NA feet
Confirmed w/ bailer? No
Notes: Well was too deep to be measured

DEPTH OF PUMP INTAKE: 10 feet
WATER COLUMN HEIGHT: Not measured
VOLUME OF WATER IN WELL: Not measured
VOLUME OF WATER PURGED: 5.0 gallons
DESCRIBE PURGE WATER MANAGEMENT: Water containted in a 5-gallon bucket and poured adjacent to well following sampling

Note: Volume = pi x ([radius in feet]^2) x (height in feet) x (7.48 gallons / 1 cubic foot)

REFERENCE POINT
☐ Top of riser
■ Top of casing
☐ Pen mark
☐ North
☐

Volume calc:
☐ .041 gal/ft (1 in)
☐ .092 gal/ft (1.5 in)
☐ .16 gal/ft (2 in)
☐ .65 gal/ft (4 in)
☐ 1.5 gal/ft (6 in)
☐ ____ gal/ft (____ in)

FIELD WATER QUALITY MEASUREMENTS

Time	1420				
Volume Purged (gallons)	5.0				
Temperature (°C)	22.4				
Conductivity (µmhos/cm)	222				
pH (Std. units)	9.93				
Flow (ml/min)					
Depth to water (ft)					

SAMPLER TYPE

	Purge	Sample
Bailer	☐	☐
Peristaltic Pump	■	■
Submersible Pump	☐	☐
Bladder pump	☐	☐
Other: _____	☐	☐

DESCRIPTION OF SAMPLING EQUIPMENT (MODEL AND S/N)
Solinist Oil/Water Indicator
Oakton® Multi-Parameter Meter
Geopump Peristaltic Pump

Analytical Parameter	Filtered (Y/N)	Preservation	Volume/Containers	Time Collected	Date Collected
PFAS	N	Ice	(2) 250-mL Poly	1425	7/15/2021

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April 9, 2019

Marc Brochu
Coneco Engineers & Scientists, Inc.
4 First Street
Bridgewater, MA 02324

Project Location: Pond St., Rockland, MA
Client Job Number:
Project Number: 3395.1
Laboratory Work Order Number: 19D0221

Enclosed are results of analyses for samples received by the laboratory on April 4, 2019. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

DRAFT REPORT
Project Manager

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Coneco Engineers & Scientists, Inc.
4 First Street
Bridgewater, MA 02324
ATTN: Marc Brochu

REPORT DATE: 4/9/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 3395.1

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19D0221

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

PROJECT LOCATION: Pond St., Rockland, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-01	19D0221-01	Ground Water		7500 RaB	CT PH-0694/NY10888/MA M-PA1457
				DOE 1990 U-02	CT PH-0694/NY10888/MA M-PA1457
				EPA 300.0	
				EPA 900.0	CT PH-0694/NY10888/MA M-PA1457
				EPA 904.0	CT PH-0694/NY10888/MA M-PA1457
				SM21-22 2510B	
				SM21-22 4500 H B	
				SW-846 6010	
				SW-846 6010D	
				SW-846 6020B	
				SW-846 8260C	
MW-01	19D0221-02	Ground Water		SM 9223B - COLILERT	

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CASE NARRATIVE SUMMARY

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

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SM21-22 4500 H B

Qualifications:

H-05

Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

Analyte & Samples(s) Qualified:

pH
19D0221-01[MW-01]

SW-846 8260C

Qualifications:

L-02

Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.

Analyte & Samples(s) Qualified:

Diethyl Ether
B227555-BS1, B227555-BSD1

L-04

Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

2,2-Dichloropropane
19D0221-01[MW-01], B227555-BLK1, B227555-BS1, B227555-BSD1

L-06

Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the high side.

Analyte & Samples(s) Qualified:

Vinyl Chloride
B227555-BS1, B227555-BSD1

RL-07

Elevated reporting limit based on lowest point in calibration.
MA CAM reporting limit not met.

Analyte & Samples(s) Qualified:

1,2,3-Trichlorobenzene
19D0221-01[MW-01]

1,2,4-Trichlorobenzene
19D0221-01[MW-01]

1,2-Dibromo-3-chloropropane (DB
19D0221-01[MW-01]

Carbon Disulfide
19D0221-01[MW-01]

Methylene Chloride
19D0221-01[MW-01]

Naphthalene
19D0221-01[MW-01]

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:

1,2-Dibromo-3-chloropropane (DB
19D0221-01[MW-01], B227555-BLK1, B227555-BS1, B227555-BSD1, S034410-CCV1

2,2-Dichloropropane
19D0221-01[MW-01], B227555-BLK1, B227555-BS1, B227555-BSD1, S034410-CCV1

V-06

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

Analyte & Samples(s) Qualified:

Vinyl Chloride
B227555-BS1, B227555-BSD1, S034410-CCV1

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V-16

Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.

Analyte & Samples(s) Qualified:

1,4-Dioxane

19D0221-01[MW-01], B227555-BLK1, B227555-BS1, B227555-BSD1, S034410-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:

Bromomethane

B227555-BS1, B227555-BSD1, S034410-CCV1

Diethyl Ether

B227555-BS1, B227555-BSD1, S034410-CCV1

Styrene

B227555-BS1, B227555-BSD1, S034410-CCV1

SW-846 8260C

Laboratory control sample recoveries for required MCP Data Enhancement 8260 compounds were all within limits specified by the method except for “difficult analytes” where recovery control limits of 40-160% are used and/or unless otherwise listed in this narrative. Difficult analytes: MIBK, MEK, acetone, 1,4-dioxane, chloromethane, dichlorodifluoromethane, 2-hexanone, and bromomethane.

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.

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Pond St., Rockland, MA | Sample Description: | Work Order: 19D0221

Date Received: 4/4/2019

Field Sample #: MW-01 | Sampled: 4/4/2019 10:00

Sample ID: 19D0221-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	26	10	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
tert-Amyl Methyl Ether (TAME)	ND	2.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Bromodichloromethane	1.1	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Bromoform	ND	2.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
2-Butanone (MEK)	ND	10	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Carbon Disulfide	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Carbon Tetrachloride	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Chlorodibromomethane	0.60	0.50	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Chloroform	7.3	2.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Chloromethane	3.6	2.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1	RL-07, V-05	SW-846 8260C	4/5/19	4/6/19 9:16	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1	L-04, V-05	SW-846 8260C	4/5/19	4/6/19 9:16	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
cis-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
trans-1,3-Dichloropropene	ND	0.40	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
1,4-Dioxane	ND	50	µg/L	1	V-16	SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH

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Project Location: Pond St., Rockland, MA | Sample Description: | Work Order: 19D0221

Date Received: 4/4/2019

Field Sample #: MW-01 | Sampled: 4/4/2019 10:00

Sample ID: 19D0221-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.60	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Methylene Chloride	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/5/19	4/6/19 9:16	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Naphthalene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/5/19	4/6/19 9:16	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/5/19	4/6/19 9:16	EEH
1,2,4-Trichlorobenzene	ND	5.0	µg/L	1	RL-07	SW-846 8260C	4/5/19	4/6/19 9:16	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	4/5/19	4/6/19 9:16	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	87.9	70-130		4/6/19 9:16
Toluene-d8	80.1	70-130		4/6/19 9:16
4-Bromofluorobenzene	100	70-130		4/6/19 9:16

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

Project Location: Pond St., Rockland, MA | Sample Description: | Work Order: 19D0221

Date Received: 4/4/2019

Field Sample #: MW-01 | Sampled: 4/4/2019 10:00

Sample ID: 19D0221-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	0.40	µg/L	1		SW-846 6020B	4/5/19	4/8/19 14:19	QNW
Iron	17	0.050	mg/L	1		SW-846 6010D	4/5/19	4/8/19 14:55	MJH
Manganese	160	1.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 14:19	QNW
Hardness	220		mg/L	10		SW-846 6010	4/5/19	4/9/19 8:17	QNW

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Project Location: Pond St., Rockland, MA | Sample Description: | Work Order: 19D0221

Date Received: 4/4/2019

Field Sample #: MW-01 | Sampled: 4/4/2019 10:00

Sample ID: 19D0221-01

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	1.1	0.40	µg/L	1		SW-846 6020B	4/5/19	4/8/19 11:14	QNW
Iron	1.8	0.050	mg/L	1		SW-846 6010D	4/5/19	4/8/19 12:43	EJB
Manganese	25	1.0	µg/L	1		SW-846 6020B	4/5/19	4/8/19 11:14	QNW

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Project Location: Pond St., Rockland, MA | Sample Description: | Work Order: 19D0221

Date Received: 4/4/2019

Field Sample #: MW-01 | Sampled: 4/4/2019 10:00

Sample ID: 19D0221-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Nitrate as N	0.68	0.10	mg/L	1		EPA 300.0	4/5/19	4/5/19 3:40	IS
Nitrite as N	ND	0.100	mg/L	1		EPA 300.0	4/5/19	4/5/19 3:40	IS
pH @20.8°C	6.7		pH Units	1	H-05	SM21-22 4500 H B	4/5/19	4/5/19 20:00	SLB
Specific conductance	2800	2.0	µmhos/cm	1		SM21-22 2510B	4/5/19	4/5/19 15:25	KMV

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Project Location: Pond St., Rockland, MA | Sample Description: | Work Order: 19D0221

Date Received: 4/4/2019

Field Sample #: MW-01 | Sampled: 4/4/2019 10:00

Sample ID: 19D0221-02

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	MCL/SMCL MA ORSG	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Coliform, Total	ND	1.0	1	MPN/100 mL	1		SM 9223B - COLILERT	4/4/19	4/4/19 14:30	DJM
E. Coli	ND	1.0	1	MPN/100 mL	1		SM 9223B - COLILERT	4/4/19	4/4/19 14:30	DJM

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

Sample Extraction Data

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0221-01 [MW-01]	B227484	10.0	10.0	04/05/19

SM 9223B - COLILERT

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0221-02 [MW-01]	B227473	100	100	04/04/19

SM21-22 2510B

Lab Number [Field ID]	Batch	Initial [mL]	Date
19D0221-01 [MW-01]	B227523	100	04/05/19

SM21-22 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
19D0221-01 [MW-01]	B227584	50.0	04/05/19

Prep Method: SW-846 3005A-SW-846 6010

Lab Number [Field ID]	Batch	Initial [mL]	Date
19D0221-01 [MW-01]	B227559	50.0	04/05/19

Prep Method: SW-846 3005A-SW-846 6010D

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0221-01 [MW-01]	B227559	50.0	50.0	04/05/19

Prep Method: SW-846 3005A Dissolved-SW-846 6010D

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0221-01 [MW-01]	B227578	5.00	5.00	04/05/19

Prep Method: SW-846 3005A-SW-846 6020B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0221-01 [MW-01]	B227554	50.0	50.0	04/05/19

Prep Method: SW-846 3005A Dissolved-SW-846 6020B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0221-01 [MW-01]	B227576	10.0	10.0	04/05/19

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19D0221-01 [MW-01]	B227555	5	5.00	04/05/19

con-test® ANALYTICAL LABORATORY
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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 B227555 - SW-846 5030B										
Blank (B227555-BLK1)				Prepared: 04/05/19 Analyzed: 04/06/19						
Acetone	ND	10	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	1.0	µg/L							
Bromobenzene	ND	1.0	µg/L							
Bromochloromethane	ND	1.0	µg/L							
Bromodichloromethane	ND	1.0	µg/L							
Bromoform	ND	1.0	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	10	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							
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	1.0	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	2.0	µg/L							V-05
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							
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							L-04, V-05
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.40	µg/L							
trans-1,3-Dichloropropene	ND	0.40	µg/L							
Diethyl Ether	ND	2.0	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
1,4-Dioxane	ND	50	µg/L							V-16
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 tert-Butyl Ether (MTBE)	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							

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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 B227555 - SW-846 5030B											
Blank (B227555-BLK1)				Prepared: 04/05/19 Analyzed: 04/06/19							
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	2.0	µg/L								
Toluene	ND	1.0	µg/L								
1,2,3-Trichlorobenzene	ND	2.0	µg/L								
1,2,4-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								
1,2,4-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								
Surrogate: 1,2-Dichloroethane-d4	*22.7*		µg/L	25.0		90.8	70-130				
Surrogate: Toluene-d8	*25.1*		µg/L	25.0		101	70-130				
Surrogate: 4-Bromofluorobenzene	*25.4*		µg/L	25.0		102	70-130				
LCS (B227555-BS1)				Prepared: 04/05/19 Analyzed: 04/06/19							
Acetone	94.8	10	µg/L	100		94.8	40-160				†
tert-Amyl Methyl Ether (TAME)	10.1	0.50	µg/L	10.0		101	70-130				
Benzene	9.72	1.0	µg/L	10.0		97.2	70-130				
Bromobenzene	11.2	1.0	µg/L	10.0		112	70-130				
Bromochloromethane	10.2	1.0	µg/L	10.0		102	70-130				
Bromodichloromethane	10.7	1.0	µg/L	10.0		107	70-130				
Bromoform	10.4	1.0	µg/L	10.0		104	70-130				
Bromomethane	7.50	2.0	µg/L	10.0		75.0	40-160			V-20	†
2-Butanone (MEK)	73.8	10	µg/L	100		73.8	40-160				†
n-Butylbenzene	11.1	1.0	µg/L	10.0		111	70-130				
sec-Butylbenzene	11.2	1.0	µg/L	10.0		112	70-130				
tert-Butylbenzene	11.2	1.0	µg/L	10.0		112	70-130				
tert-Butyl Ethyl Ether (TBEE)	10.4	0.50	µg/L	10.0		104	70-130				
Carbon Disulfide	12.0	5.0	µg/L	10.0		120	70-130				
Carbon Tetrachloride	9.63	1.0	µg/L	10.0		96.3	70-130				
Chlorobenzene	11.5	1.0	µg/L	10.0		115	70-130				
Chlorodibromomethane	11.2	0.50	µg/L	10.0		112	70-130				
Chloroethane	11.2	2.0	µg/L	10.0		112	70-130				
Chloroform	9.79	2.0	µg/L	10.0		97.9	70-130				
Chloromethane	7.63	2.0	µg/L	10.0		76.3	40-160				†
2-Chlorotoluene	10.8	1.0	µg/L	10.0		108	70-130				
4-Chlorotoluene	11.7	1.0	µg/L	10.0		117	70-130				
1,2-Dibromo-3-chloropropane (DBCP)	7.95	2.0	µg/L	10.0		79.5	70-130			V-05	
1,2-Dibromoethane (EDB)	10.8	0.50	µg/L	10.0		108	70-130				
Dibromomethane	10.6	1.0	µg/L	10.0		106	70-130				
1,2-Dichlorobenzene	11.3	1.0	µg/L	10.0		113	70-130				
1,3-Dichlorobenzene	11.6	1.0	µg/L	10.0		116	70-130				
1,4-Dichlorobenzene	11.1	1.0	µg/L	10.0		111	70-130				

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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 B227555 - SW-846 5030B												
LCS (B227555-BS1)				Prepared: 04/05/19 Analyzed: 04/06/19								
Dichlorodifluoromethane (Freon 12)	6.85	2.0	µg/L	10.0		68.5		40-160			L-14	†
1,1-Dichloroethane	10.3	1.0	µg/L	10.0		103		70-130				
1,2-Dichloroethane	9.11	1.0	µg/L	10.0		91.1		70-130				
1,1-Dichloroethylene	11.7	1.0	µg/L	10.0		117		70-130				
cis-1,2-Dichloroethylene	10.0	1.0	µg/L	10.0		100		70-130				
trans-1,2-Dichloroethylene	10.8	1.0	µg/L	10.0		108		70-130				
1,2-Dichloropropane	9.94	1.0	µg/L	10.0		99.4		70-130				
1,3-Dichloropropane	10.5	0.50	µg/L	10.0		105		70-130				
2,2-Dichloropropane	6.91	1.0	µg/L	10.0		**69.1**	*	70-130			L-04, V-05	
1,1-Dichloropropene	9.56	0.50	µg/L	10.0		95.6		70-130				
cis-1,3-Dichloropropene	10.7	0.40	µg/L	10.0		107		70-130				
trans-1,3-Dichloropropene	11.1	0.40	µg/L	10.0		111		70-130				
Diethyl Ether	13.5	2.0	µg/L	10.0		**135**	*	70-130			L-02, V-20	
Diisopropyl Ether (DIPE)	10.1	0.50	µg/L	10.0		101		70-130				
1,4-Dioxane	95.2	50	µg/L	100		95.2		40-160			V-16	†
Ethylbenzene	11.0	1.0	µg/L	10.0		110		70-130				
Hexachlorobutadiene	11.6	0.60	µg/L	10.0		116		70-130				
2-Hexanone (MBK)	83.9	10	µg/L	100		83.9		40-160				†
Isopropylbenzene (Cumene)	11.4	1.0	µg/L	10.0		114		70-130				
p-Isopropyltoluene (p-Cymene)	11.2	1.0	µg/L	10.0		112		70-130				
Methyl tert-Butyl Ether (MTBE)	10.9	1.0	µg/L	10.0		109		70-130				
Methylene Chloride	12.3	5.0	µg/L	10.0		123		70-130				
4-Methyl-2-pentanone (MIBK)	88.5	10	µg/L	100		88.5		40-160				†
Naphthalene	9.05	2.0	µg/L	10.0		90.5		70-130				
n-Propylbenzene	11.3	1.0	µg/L	10.0		113		70-130				
Styrene	12.5	1.0	µg/L	10.0		125		70-130			V-20	
1,1,1,2-Tetrachloroethane	11.6	1.0	µg/L	10.0		116		70-130				
1,1,2,2-Tetrachloroethane	10.7	0.50	µg/L	10.0		107		70-130				
Tetrachloroethylene	10.6	1.0	µg/L	10.0		106		70-130				
Tetrahydrofuran	9.37	2.0	µg/L	10.0		93.7		70-130				
Toluene	10.6	1.0	µg/L	10.0		106		70-130				
1,2,3-Trichlorobenzene	10.2	2.0	µg/L	10.0		102		70-130				
1,2,4-Trichlorobenzene	9.91	1.0	µg/L	10.0		99.1		70-130				
1,1,1-Trichloroethane	9.71	1.0	µg/L	10.0		97.1		70-130				
1,1,2-Trichloroethane	11.1	1.0	µg/L	10.0		111		70-130				
Trichloroethylene	10.7	1.0	µg/L	10.0		107		70-130				
Trichlorofluoromethane (Freon 11)	9.70	2.0	µg/L	10.0		97.0		70-130				
1,2,3-Trichloropropane	9.89	2.0	µg/L	10.0		98.9		70-130				
1,2,4-Trimethylbenzene	10.9	1.0	µg/L	10.0		109		70-130				
1,3,5-Trimethylbenzene	11.4	1.0	µg/L	10.0		114		70-130				
Vinyl Chloride	16.2	2.0	µg/L	10.0		**162**	*	70-130			L-06, V-06	
m+p Xylene	22.4	2.0	µg/L	20.0		112		70-130				
o-Xylene	11.5	1.0	µg/L	10.0		115		70-130				
Surrogate: 1,2-Dichloroethane-d4	*23.0*		µg/L	25.0		91.9		70-130				
Surrogate: Toluene-d8	*24.7*		µg/L	25.0		98.7		70-130				
Surrogate: 4-Bromofluorobenzene	*26.2*		µg/L	25.0		105		70-130				

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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 B227555 - SW-846 5030B												
LCS Dup (B227555-BSD1)				Prepared: 04/05/19 Analyzed: 04/06/19								
Acetone	94.3	10	µg/L	100		94.3		40-160	0.529	20		†
tert-Amyl Methyl Ether (TAME)	9.72	0.50	µg/L	10.0		97.2		70-130	3.83	20		
Benzene	9.79	1.0	µg/L	10.0		97.9		70-130	0.718	20		
Bromobenzene	11.4	1.0	µg/L	10.0		114		70-130	1.41	20		
Bromochloromethane	10.3	1.0	µg/L	10.0		103		70-130	1.37	20		
Bromodichloromethane	10.6	1.0	µg/L	10.0		106		70-130	0.749	20		
Bromoform	11.0	1.0	µg/L	10.0		110		70-130	5.24	20		
Bromomethane	8.51	2.0	µg/L	10.0		85.1		40-160	12.6	20	V-20	†
2-Butanone (MEK)	73.2	10	µg/L	100		73.2		40-160	0.721	20		†
n-Butylbenzene	11.0	1.0	µg/L	10.0		110		70-130	1.45	20		
sec-Butylbenzene	11.3	1.0	µg/L	10.0		113		70-130	0.798	20		
tert-Butylbenzene	11.2	1.0	µg/L	10.0		112		70-130	0.447	20		
tert-Butyl Ethyl Ether (TBEE)	10.4	0.50	µg/L	10.0		104		70-130	0.672	20		
Carbon Disulfide	12.0	5.0	µg/L	10.0		120		70-130	0.334	20		
Carbon Tetrachloride	9.65	1.0	µg/L	10.0		96.5		70-130	0.207	20		
Chlorobenzene	11.9	1.0	µg/L	10.0		119		70-130	3.25	20		
Chlorodibromomethane	11.5	0.50	µg/L	10.0		115		70-130	2.20	20		
Chloroethane	11.5	2.0	µg/L	10.0		115		70-130	2.73	20		
Chloroform	9.70	2.0	µg/L	10.0		97.0		70-130	0.924	20		
Chloromethane	7.75	2.0	µg/L	10.0		77.5		40-160	1.56	20		†
2-Chlorotoluene	11.0	1.0	µg/L	10.0		110		70-130	1.38	20		
4-Chlorotoluene	11.8	1.0	µg/L	10.0		118		70-130	1.19	20		
1,2-Dibromo-3-chloropropane (DBCP)	7.25	2.0	µg/L	10.0		72.5		70-130	9.21	20	V-05	
1,2-Dibromoethane (EDB)	11.2	0.50	µg/L	10.0		112		70-130	3.82	20		
Dibromomethane	10.9	1.0	µg/L	10.0		109		70-130	2.60	20		
1,2-Dichlorobenzene	11.7	1.0	µg/L	10.0		117		70-130	3.30	20		
1,3-Dichlorobenzene	11.7	1.0	µg/L	10.0		117		70-130	0.775	20		
1,4-Dichlorobenzene	11.2	1.0	µg/L	10.0		112		70-130	0.448	20		
Dichlorodifluoromethane (Freon 12)	6.74	2.0	µg/L	10.0		67.4		40-160	1.62	20	L-14	†
1,1-Dichloroethane	10.2	1.0	µg/L	10.0		102		70-130	0.978	20		
1,2-Dichloroethane	9.17	1.0	µg/L	10.0		91.7		70-130	0.656	20		
1,1-Dichloroethylene	11.5	1.0	µg/L	10.0		115		70-130	2.33	20		
cis-1,2-Dichloroethylene	10.1	1.0	µg/L	10.0		101		70-130	1.09	20		
trans-1,2-Dichloroethylene	10.5	1.0	µg/L	10.0		105		70-130	2.53	20		
1,2-Dichloropropane	9.75	1.0	µg/L	10.0		97.5		70-130	1.93	20		
1,3-Dichloropropane	10.5	0.50	µg/L	10.0		105		70-130	0.381	20		
2,2-Dichloropropane	6.75	1.0	µg/L	10.0		**67.5**	*	70-130	2.34	20	L-04, V-05	
1,1-Dichloropropene	9.51	0.50	µg/L	10.0		95.1		70-130	0.524	20		
cis-1,3-Dichloropropene	10.9	0.40	µg/L	10.0		109		70-130	2.22	20		
trans-1,3-Dichloropropene	11.2	0.40	µg/L	10.0		112		70-130	0.719	20		
Diethyl Ether	13.5	2.0	µg/L	10.0		**135**	*	70-130	0.518	20	L-02, V-20	
Diisopropyl Ether (DIPE)	10.2	0.50	µg/L	10.0		102		70-130	0.395	20		
1,4-Dioxane	94.3	50	µg/L	100		94.3		40-160	1.02	20	V-16	†
Ethylbenzene	11.2	1.0	µg/L	10.0		112		70-130	0.991	20		
Hexachlorobutadiene	11.6	0.60	µg/L	10.0		116		70-130	0.517	20		
2-Hexanone (MBK)	83.6	10	µg/L	100		83.6		40-160	0.322	20		†
Isopropylbenzene (Cumene)	11.4	1.0	µg/L	10.0		114		70-130	0.440	20		
p-Isopropyltoluene (p-Cymene)	11.2	1.0	µg/L	10.0		112		70-130	0.714	20		
Methyl tert-Butyl Ether (MTBE)	10.8	1.0	µg/L	10.0		108		70-130	1.48	20		
Methylene Chloride	12.2	5.0	µg/L	10.0		122		70-130	1.06	20		
4-Methyl-2-pentanone (MIBK)	86.6	10	µg/L	100		86.6		40-160	2.19	20		†
Naphthalene	8.75	2.0	µg/L	10.0		87.5		70-130	3.37	20		

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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 B227555 - SW-846 5030B											
LCS Dup (B227555-BSD1)				Prepared: 04/05/19 Analyzed: 04/06/19							
n-Propylbenzene	11.4	1.0	µg/L	10.0		114		70-130	0.529	20	
Styrene	12.8	1.0	µg/L	10.0		128		70-130	3.00	20	V-20
1,1,1,2-Tetrachloroethane	12.1	1.0	µg/L	10.0		121		70-130	3.71	20	
1,1,2,2-Tetrachloroethane	10.9	0.50	µg/L	10.0		109		70-130	1.57	20	
Tetrachloroethylene	10.4	1.0	µg/L	10.0		104		70-130	2.19	20	
Tetrahydrofuran	9.14	2.0	µg/L	10.0		91.4		70-130	2.49	20	
Toluene	10.5	1.0	µg/L	10.0		105		70-130	1.42	20	
1,2,3-Trichlorobenzene	10.1	2.0	µg/L	10.0		101		70-130	1.38	20	
1,2,4-Trichlorobenzene	9.75	1.0	µg/L	10.0		97.5		70-130	1.63	20	
1,1,1-Trichloroethane	9.60	1.0	µg/L	10.0		96.0		70-130	1.14	20	
1,1,2-Trichloroethane	11.1	1.0	µg/L	10.0		111		70-130	0.360	20	
Trichloroethylene	10.3	1.0	µg/L	10.0		103		70-130	3.14	20	
Trichlorofluoromethane (Freon 11)	9.75	2.0	µg/L	10.0		97.5		70-130	0.514	20	
1,2,3-Trichloropropane	10.1	2.0	µg/L	10.0		101		70-130	1.80	20	
1,2,4-Trimethylbenzene	11.2	1.0	µg/L	10.0		112		70-130	2.71	20	
1,3,5-Trimethylbenzene	11.4	1.0	µg/L	10.0		114		70-130	0.702	20	
Vinyl Chloride	17.1	2.0	µg/L	10.0		**171**	*	70-130	5.41	20	L-06, V-06
m+p Xylene	22.4	2.0	µg/L	20.0		112		70-130	0.178	20	
o-Xylene	11.8	1.0	µg/L	10.0		118		70-130	2.15	20	
Surrogate: 1,2-Dichloroethane-d4	*22.8*		µg/L	25.0		91.0		70-130			
Surrogate: Toluene-d8	*24.6*		µg/L	25.0		98.6		70-130			
Surrogate: 4-Bromofluorobenzene	*26.3*		µg/L	25.0		105		70-130			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227554 - SW-846 3005A										
Blank (B227554-BLK1)				Prepared: 04/05/19 Analyzed: 04/08/19						
Arsenic	ND	0.40	µg/L							
Manganese	ND	1.0	µg/L							
LCS (B227554-BS1)				Prepared: 04/05/19 Analyzed: 04/08/19						
Arsenic	544	4.0	µg/L	500		109	80-120			
Manganese	548	10	µg/L	500		110	80-120			
LCS Dup (B227554-BSD1)				Prepared: 04/05/19 Analyzed: 04/08/19						
Arsenic	504	4.0	µg/L	500		101	80-120	7.71	20	
Manganese	501	10	µg/L	500		100	80-120	8.98	20	
Batch B227559 - SW-846 3005A										
Blank (B227559-BLK1)				Prepared: 04/05/19 Analyzed: 04/08/19						
Iron	ND	0.050	mg/L							
LCS (B227559-BS1)				Prepared: 04/05/19 Analyzed: 04/08/19						
Iron	4.09	0.050	mg/L	4.00		102	80-120			
LCS Dup (B227559-BSD1)				Prepared: 04/05/19 Analyzed: 04/08/19						
Iron	4.03	0.050	mg/L	4.00		101	80-120	1.38	20	

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QUALITY CONTROL

Metals Analyses (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227576 - SW-846 3005A Dissolved										
Blank (B227576-BLK1)				Prepared: 04/05/19 Analyzed: 04/08/19						
Arsenic	ND	0.40	µg/L							
Manganese	ND	1.0	µg/L							
LCS (B227576-BS1)				Prepared: 04/05/19 Analyzed: 04/08/19						
Arsenic	41.3	0.40	µg/L	40.0		103	80-120			
Manganese	42.6	1.0	µg/L	40.0		107	80-120			
Duplicate (B227576-DUP1)	**Source: 19D0221-01**			Prepared: 04/05/19 Analyzed: 04/08/19						
Arsenic	0.912	0.40	µg/L		1.08			16.8	20	
Manganese	25.3	1.0	µg/L		25.1			0.896	20	
Matrix Spike (B227576-MS1)	**Source: 19D0221-01**			Prepared: 04/05/19 Analyzed: 04/08/19						
Arsenic	28.9	0.50	µg/L	25.0	1.08	111	75-125			
Manganese	54.1	1.2	µg/L	25.0	25.1	116	75-125			
Batch B227578 - SW-846 3005A Dissolved										
Blank (B227578-BLK1)				Prepared: 04/05/19 Analyzed: 04/08/19						
Iron	ND	0.050	mg/L							
LCS (B227578-BS1)				Prepared: 04/05/19 Analyzed: 04/08/19						
Iron	3.97	0.050	mg/L	4.00		99.2	80-120			

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B227473 - SM 9223B - COLILERT										
Blank (B227473-BLK1)				Prepared & Analyzed: 04/04/19						
Coliform, Total	ND	1.0	MPN/100 mL							
E. Coli	ND	1.0	MPN/100 mL							
Batch B227484 - EPA 300.0										
Blank (B227484-BLK1)				Prepared & Analyzed: 04/04/19						
Nitrate as N	ND	0.10	mg/L							
Nitrite as N	ND	0.100	mg/L							
LCS (B227484-BS1)				Prepared & Analyzed: 04/04/19						
Nitrate as N	0.94	0.10	mg/L	1.00		93.5	90-110			
Nitrite as N	1.05	0.100	mg/L	1.00		105	90-110			
LCS Dup (B227484-BSD1)				Prepared & Analyzed: 04/04/19						
Nitrate as N	0.94	0.10	mg/L	1.00		94.3	90-110	0.873	20	
Nitrite as N	1.05	0.100	mg/L	1.00		105	90-110	0.0760	20	
Batch B227523 - SM21-22 2510B										
Blank (B227523-BLK1)				Prepared & Analyzed: 04/05/19						
Specific conductance	ND	2.0	µmhos/cm							
LCS (B227523-BS1)				Prepared & Analyzed: 04/05/19						
Specific conductance	200		µmhos/cm	192		103	90-110			
Duplicate (B227523-DUP1)		**Source: 19D0221-01**		Prepared & Analyzed: 04/05/19						
Specific conductance	2800	2.0	µmhos/cm		2800			2.46	21	
Batch B227584 - SM21-22 4500 H B										
LCS (B227584-BS1)				Prepared & Analyzed: 04/05/19						
pH	5.96		pH Units	6.00		99.4	90-110			
LCS (B227584-BS2)				Prepared: 04/05/19 Analyzed: 04/09/19						
pH	5.91		pH Units	6.00		98.5	90-110			

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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.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.
L-02	Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.
L-04	Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
L-06	Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the high side.
L-14	Compound classified by MA CAM as difficult with acceptable recoveries of 40-160%. Recovery does not meet 70-130% criteria but does meet difficult compound criteria.
RL-07	Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.
V-05	Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.
V-06	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.
V-16	Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
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.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 300.0 in Water	
Nitrate as N	NC,NY,MA,VA,ME,NH,CT,RI
Nitrite as N	NY,NC,NH,VA,ME,CT,RI
SM 9223B - COLILERT in Drinking Water	
Coliform, Total	MA,CT,RI
E. Coli	MA,CT,RI
SM21-22 2510B in Water	
Specific conductance	CT,MA,NH,NY,RI,NC,ME,VA
SM21-22 4500 H B in Water	
pH	CT,MA,RI
SW-846 6010 in Water	
Hardness	CT,MA,NH,NY
SW-846 6010D in Water	
Iron	CT,NH,NY,ME,VA,NC
Iron	CT,NH,NY,ME,NC,VA
SW-846 6020B in Water	
Arsenic	CT,NH,NY,ME,VA,NC
Arsenic	CT,NH,NY,NC,ME,VA
Manganese	CT,NH,NY,NC,ME,VA
Manganese	CT,NH,NY,ME,VA,NC
SW-846 8260C in Water	
Acetone	CT,NH,NY,ME
tert-Amyl Methyl Ether (TAME)	NH,NY,ME
Benzene	CT,NH,NY,ME
Bromobenzene	ME
Bromochloromethane	NH,NY,ME
Bromodichloromethane	CT,NH,NY,ME
Bromoform	CT,NH,NY,ME
Bromomethane	CT,NH,NY,ME
2-Butanone (MEK)	CT,NH,NY,ME
n-Butylbenzene	NY,ME
sec-Butylbenzene	NY,ME
tert-Butylbenzene	NY,ME
tert-Butyl Ethyl Ether (TBEE)	NH,NY,ME
Carbon Disulfide	CT,NH,NY,ME
Carbon Tetrachloride	CT,NH,NY,ME
Chlorobenzene	CT,NH,NY,ME
Chlorodibromomethane	CT,NH,NY,ME
Chloroethane	CT,NH,NY,ME
Chloroform	CT,NH,NY,ME
Chloromethane	CT,NH,NY,ME
2-Chlorotoluene	NY,ME
4-Chlorotoluene	NY,ME
1,2-Dibromo-3-chloropropane (DBCP)	NY
1,2-Dibromoethane (EDB)	NY

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

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260C in Water	
Dibromomethane	NH,NY,ME
1,2-Dichlorobenzene	CT,NY,ME
1,3-Dichlorobenzene	CT,NH,NY,ME
1,4-Dichlorobenzene	CT,NH,NY,ME
Dichlorodifluoromethane (Freon 12)	NH,NY,ME
1,1-Dichloroethane	CT,NH,NY,ME
1,2-Dichloroethane	CT,NH,NY,ME
1,1-Dichloroethylene	CT,NH,NY,ME
cis-1,2-Dichloroethylene	NY,ME
trans-1,2-Dichloroethylene	CT,NH,NY,ME
1,2-Dichloropropane	CT,NH,NY,ME
1,3-Dichloropropane	NY,ME
2,2-Dichloropropane	NH,NY,ME
1,1-Dichloropropene	NH,NY,ME
cis-1,3-Dichloropropene	CT,NH,NY,ME
trans-1,3-Dichloropropene	CT,NH,NY,ME
Diisopropyl Ether (DIPE)	NH,NY,ME
Ethylbenzene	CT,NH,NY,ME
Hexachlorobutadiene	CT,NH,NY,ME
2-Hexanone (MBK)	CT,NH,NY,ME
Isopropylbenzene (Cumene)	NY,ME
p-Isopropyltoluene (p-Cymene)	CT,NH,NY,ME
Methyl tert-Butyl Ether (MTBE)	CT,NH,NY,ME
Methylene Chloride	CT,NH,NY,ME
4-Methyl-2-pentanone (MIBK)	CT,NH,NY,ME
Naphthalene	NH,NY,ME
n-Propylbenzene	CT,NH,NY,ME
Styrene	CT,NH,NY,ME
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME
1,1,2,2-Tetrachloroethane	CT,NH,NY,ME
Tetrachloroethylene	CT,NH,NY,ME
Toluene	CT,NH,NY,ME
1,2,3-Trichlorobenzene	NH,NY,ME
1,2,4-Trichlorobenzene	CT,NH,NY,ME
1,1,1-Trichloroethane	CT,NH,NY,ME
1,1,2-Trichloroethane	CT,NH,NY,ME
Trichloroethylene	CT,NH,NY,ME
Trichlorofluoromethane (Freon 11)	CT,NH,NY,ME
1,2,3-Trichloropropane	NH,NY,ME
1,2,4-Trimethylbenzene	NY,ME
1,3,5-Trimethylbenzene	NY,ME
Vinyl Chloride	CT,NH,NY,ME
m+p Xylene	CT,NH,NY,ME
o-Xylene	CT,NH,NY,ME

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

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2019
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2019
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2020
RI	Rhode Island Department of Health	LAO00112	12/30/2019
NC	North Carolina Div. of Water Quality	652	12/31/2019
NJ	New Jersey DEP	MA007 NELAP	06/30/2019
FL	Florida Department of Health	E871027 NELAP	06/30/2019
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2019
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2019
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2019
NC-DW	North Carolina Department of Health	25703	07/31/2019

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Doc # 381 Rev 1_03242017

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Page 1 of 2

Company Name: Correia Engineers & Scientists
Address: 4 First Street, Bridgewater MA
Phone: 508-697-3199
Project Name: Pond Street
Project Location: 0 Pond Street, Rockland MA
Project Number: 3395.1
Project Manager: Marc Brochu
Con-Test Quote Name/Number:
Invoice Recipient:
Sampled By: DCK

Requested Turnaround Time
7-Day ☐ 10-Day ☐
Due Date:

Rush - Approval Required
1-Day ☒ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☒ EXCEL ☐
Other:
CLP Like Data Pkg Required: ☐
Email To: MBrochu@correia.com
Fax To #:

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	[1]Matrix Code	Conc Code	VOCs 8260	pH	Conductivity	Nitrate	Nitrite	Dissolved Iron	Dissolved Manganese	Dissolved Arsenic	Radionuclides	Coliform Bacteria	Hardness
1	MW-01	4/4/19 10:00	4/4/19 10:00		X	GW	U	X	X	X	X	X	X	X	X	X	X	X

3	1	# of Containers
H	I	[2] Preservation Code
V	P	[3] Container Code

Dissolved Metals Samples
☒ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

Comments:
Coliform Bacteria - Total count

[1] **Matrix Codes:**
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] **Preservation Codes:**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

[3] **Container Codes:**
A = Amber Glass
G = Glass
P = Plastic
ST = Sterile
V = Vial
S = Summa Canister
T = Tedlar Bag
O = Other (please define) Bact

Please use the following codes to indicate possible sample concentration within the **Conc Code** column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time: 4/4/19 16:30
Received by: (signature)	Date/Time: 4/4/19 1038
Relinquished by: (signature)	Date/Time: 4/4/19 1235
Received by: (signature) 3.5	Date/Time: 4/4/19 1235
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Detection Limit Requirements
MA: RCGW-1
CT:
Other:

Special Requirements
☒ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☐ MA State DW Required
PWSID #

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Project Entity
☐ Government ☐ Municipality ☐ MWRA ☐ WRTA
☐ Federal ☐ 21 J ☐ School
☐ City ☐ Brownfield ☐ MBTA

Other
☐ Chromatogram
☐ AIHA-LAP, LLC

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

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19D0221

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Email: info@contestlabs.com

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CHAIN OF CUSTODY RECORD

Doc # 381 Rev 1_03242017

39 Spruce Street
East Longmeadow, MA 01028

Company Name: Conco Engineers & Scientists
Address: 4 First Street, Bridgewater MA
Phone: 508-697-3191
Project Name: Pond Street
Project Location: 0 Pond Street, Rockland MA
Project Number: 3395.1
Project Manager: Marc Brown
Con-Test Quote Name/Number:
Invoice Recipient:
Sampled By: DCK

Turnaround Time Requested
7-Day ☐ 10-Day ☐
Due Date:

Rush Approval Required
1-Day ☒ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☒ EXCEL ☐
Other:
CLP Like Data Pkg Required: ☐
Email To:
Fax To #:

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	Matrix Code	Conc Code	TCL VOC	Total Manganese	Total Arsenic
1	MW-01	4/4/19 10:00	4/4/19 10:00		X	GW	U	X	X	X

ANALYSIS REQUESTED

# of Containers
[2] Preservation Code
[3] Container Code

Dissolved Metals Samples
○ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

[1] **Matrix Codes:**
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] **Preservation Codes:**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

[3] **Container Codes:**
A = Amber Glass
G = Glass
P = Plastic
ST = Sterile
V = Vial
S = Summa Canister
T = Tedlar Bag
O = Other (please define)

Comments:

Please use the following codes to indicate possible sample concentration within the **Conc Code** column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

	Date/Time
Relinquished by: (signature)	4/4/19 10:30
Received by: (signature)	4/4/19 1030
Relinquished by: (signature)	4/4/19 1235
Received by: (signature)	4/4/19 1235
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Detection Limit Requirements
MA: RCGW-1
RCP:
Other:

Special Requirements
☒ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☐ MA State DW Required
PWSID #

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Project Entity
☐ Government ☐ Municipality ☐ MWRA ☐ WRTA
☐ Federal ☐ 21 J ☐ School
☐ City ☐ Brownfield ☐ MBTA

Other
☐ Chromatogram
☐ AIHA-LAP,LLC

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

Table of Contents

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 Conco

Received By RAP Date 4/4/19 Time 1235

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 # 5 Actual Temp - 3.5 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? T Who was notified? Katie, Emily, Ryan, Lauren

Are there Short Holds? T Who was notified? Katie

Is there enough Volume? T

Is there Headspace where applicable? F MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? F On COC? F

Do all samples have the proper pH? Acid HNO2 Base _____

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic	2	16 oz Amb.	
HCL-	3	500 mL Amb.		500 mL Plastic	1	8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	3	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria	1	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:

Three day Turn cond time per J.L.H.

1A0022 1

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Doc # 381 Rev 1_03242017

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Page 1 of 2

Company Name: Control Engineers & Scientists
Address: 4 First Street, Bridgewater MA
Phone: 508-697-3199
Project Name: Pond Street
Project Location: 0 Pond Street, Rockland MA
Project Number: 3395.1
Project Manager: Mark Brochu
Con-Test Quote Name/Number:
Invoice Recipient:
Sampled By: DCK

Requested Turnaround Time:
7-Day ☐ 10-Day ☐
Due Date:

Rush Approval Required:
1-Day ☒ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery:
Format: PDF ☒ EXCEL ☐
Other:
CLP Like Data Pkg Required: ☐
Email To: MBrochu@controlengineers.com
Fax To #:

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	[1]Matrix Code	Conc Code	VOCs 8260	pH	Conductivity	Nitrate	Nitrite	Dissolved Iron	Dissolved Manganese	Dissolved Arsenic	Radionuclides	Coliform Bacteria	Hardness
1	MW-01	4/4/19 10:00	4/4/19 10:00		X	GW	U	X	X	X	X	X	X	X	X	X	X	X

ANALYSIS REQUESTED

# of Containers	3	1			1			1	2	1
[2] Preservation Code	H	I			N			N	I	H
[3] Container Code	V	P			P			P	O	P

Dissolved Metals Samples:
☒ Field Filtered
○ Lab to Filter

Orthophosphate Samples:
○ Field Filtered
○ Lab to Filter

[1] **Matrix Codes:**
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] **Preservation Codes:**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

[3] **Container Codes:**
A = Amber Glass
G = Glass
P = Plastic
ST = Sterile
V = Vial
S = Summa Canister
T = Tedlar Bag
O = Other (please define) Bact

Comments: Conform Bacteria - Total count

Lab said it could take 3 days. client was notified. JLH 4/5/19

s to indicate possible sample concentration
Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time: 4/4/19 16:30
Received by: (signature)	Date/Time: 4/4/19 1038
Relinquished by: (signature)	Date/Time: 4/4/19 1235
Received by: (signature) 3.5	Date/Time: 4/4/19 1235
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Detection Limit Requirements:
MA: RCGW-1
RCP:
Other:

Special Requirements:
☒ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☐ MA State DW Required
PWSID #

con-test ANALYTICAL LABORATORY
www.contestlabs.com
NELAC and AIHA-LAP, LLC Accredited

Project Entity:
☐ Government ☐ Municipality ☐ MWRA ☐ WRTA
☐ Federal ☐ 21 J ☐ School
☐ City ☐ Brownfield ☐ MBTA

Other:
☐ Chromatogram
☐ AIHA-LAP, LLC

PCB ONLY:
☐ Soxhlet
☐ Non Soxhlet

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con-test ANALYTICAL LABORATORY

Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com

http://www.contestlabs.com

CHAIN OF CUSTODY RECORD

Doc # 381 Rev 1_03242017

39 Spruce Street
East Longmeadow, MA 01028

Page 2 of 2

Company Name: Conco Engineers & Scientists
Address: 4 First Street, Bridgewater MA
Phone: 508-697-3191
Project Name: Pond Street
Project Location: 0 Pond Street, Rockland MA
Project Number: 3395.1
Project Manager: Marc Brown
Con-Test Quote Name/Number:
Invoice Recipient:
Sampled By: DCK

Turnaround Time Request
7-Day ☐ 10-Day ☐
Due Date:

Rush Approval Required
1-Day ☒ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☒ EXCEL ☐
Other:
CLP Like Data Pkg Required: ☐
Email To:
Fax To #:

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	Matrix Code	Conc Code	TPH 1664	Total Manganese	Total Arsenic	# of Containers	Preservation Code	Container Code
1	MW-01	4/4/19 10:00	4/4/19 10:00		X	GW	U	X	X	X	1	N	P

ANALYSIS REQUESTED

Dissolved Metals Samples
○ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

Comments:

Please use the following codes to indicate possible sample concentration within the **Conc Code** column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

[1] **Matrix Codes:**
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] **Preservation Codes:**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

[3] **Container Codes:**
A = Amber Glass
G = Glass
P = Plastic
ST = Sterile
V = Vial
S = Summa Canister
T = Tedlar Bag
O = Other (please define)

	Date/Time
Relinquished by: (signature)	4/4/19 10:30
Received by: (signature)	4/4/19 1030
Relinquished by: (signature)	4/4/19 1235
Received by: (signature)	4/4/19 1235
Relinquished by: (signature)	
Received by: (signature)	

Detection Limit Requirements
MA RCGW-1
CT
Other

Special Requirements
☒ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☐ MA State DW Required
PWSID #

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NELAC and AIHA-LAP, LLC Accredited

Project Entity
☐ Government ☐ Municipality ☐ MWRA ☐ WRTA
☐ Federal ☐ 21 J ☐ School
☐ City ☐ Brownfield ☐ MBTA

Other
☐ Chromatogram
☐ AIHA-LAP,LLC

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

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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 Conco

Received By RAP Date 4/4/19 Time 1235

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 # 5 Actual Temp - 3.5 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? T Who was notified? Katie, Emily, Ryan, Lauren

Are there Short Holds? T Who was notified? Katie

Is there enough Volume? T

Is there Headspace where applicable? F MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? F On COC? F

Do all samples have the proper pH? Acid HNO2 Base _____

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic	2	16 oz Amb.	
HCL-	3	500 mL Amb.		500 mL Plastic	1	8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	3	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria	1	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:

Three day Turn cond time per J.L.H.

ANALYTICAL REPORT

Lab Number:	L2138430
Client:	Coneco Engineers & Scientists, Inc. 4 First Street Bridgewater, MA 02324
ATTN:	Marc Brochu
Phone:	(508) 697-3191
Project Name:	75-79 POND ST.
Project Number:	3395
Report Date:	07/28/21

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: 75-79 POND ST.
Project Number: 3395

Lab Number: L2138430
Report Date: 07/28/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2138430-01	WELL-1	WATER	ROCKLAND, MA	07/15/21 12:05	07/16/21
L2138430-02	WELL-2	WATER	ROCKLAND, MA	07/15/21 13:20	07/16/21
L2138430-03	WELL-3	WATER	ROCKLAND, MA	07/15/21 14:25	07/16/21
L2138430-04	FIELD BLANK	WATER	ROCKLAND, MA	07/15/21 13:30	07/16/21

Project Name:	75-79 POND ST.	**Lab Number:**	L2138430
Project Number:	3395	**Report Date:**	07/28/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	75-79 POND ST.	**Lab Number:**	L2138430
Project Number:	3395	**Report Date:**	07/28/21

Case Narrative (continued)

Perfluorinated Alkyl Acids by Isotope Dilution

L2138430-01: The Extracted Internal Standard recovery was outside the acceptance criteria for perfluoro[13c8]octanesulfonamide (m8fosa) (5%), however this does not apply to the abbreviated list of target analytes reported.

L2138430-02: The Extracted Internal Standard recoveries were outside the acceptance criteria for perfluoro[13c8]octanesulfonamide (m8fosa) (8%), 1h,1h,2h,2h-perfluoro[1,2-13c2]hexanesulfonic acid (m2-4:2fts) (151%), and 1h,1h,2h,2h-perfluoro[1,2-13c2]octanesulfonic acid (m2-6:2fts) (156%), however these do not apply to the abbreviated list of target analytes reported.

WG1526105-1: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 07/28/21

ORGANICS

SEMIVOLATILES

Project Name: 75-79 POND ST.
Project Number: 3395
Lab Number: L2138430
Report Date: 07/28/21

SAMPLE RESULTS

Lab ID: L2138430-01
Client ID: WELL-1
Sample Location: ROCKLAND, MA

Date Collected: 07/15/21 12:05
Date Received: 07/16/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 07/21/21 20:02
Analyst: MP

Extraction Method: ALPHA 23528
Extraction Date: 07/21/21 04:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.89	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.89	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.89	--	1
Perfluorohexanesulfonic Acid (PFHxS)	2.20		ng/l	1.89	--	1
Perfluorooctanoic Acid (PFOA)	2.78		ng/l	1.89	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.89	--	1
Perfluorooctanesulfonic Acid (PFOS)	3.52	F	ng/l	1.89	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.89	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.89	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.89	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.89	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.89	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.89	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.89	--	1

Project Name: 75-79 POND ST. **Lab Number:** L2138430

Project Number: 3395 **Report Date:** 07/28/21

SAMPLE RESULTS

Lab ID: L2138430-01 Date Collected: 07/15/21 12:05

Client ID: WELL-1 Date Received: 07/16/21

Sample Location: ROCKLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	105		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	141		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	109		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	111		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	103		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	101		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	109		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	102		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	119		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	100		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	102		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	90		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	106		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	93		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	89		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	**5**	Q	10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	97		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	84		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	81		22-136

Project Name: 75-79 POND ST.
Lab Number: L2138430
Project Number: 3395
Report Date: 07/28/21

SAMPLE RESULTS

Lab ID: L2138430-02
Client ID: WELL-2
Sample Location: ROCKLAND, MA

Date Collected: 07/15/21 13:20
Date Received: 07/16/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 07/21/21 20:18
Analyst: MP

Extraction Method: ALPHA 23528
Extraction Date: 07/21/21 04:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.88	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.88	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.88	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.88	--	1
Perfluorooctanoic Acid (PFOA)	2.78		ng/l	1.88	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.88	--	1
Perfluorooctanesulfonic Acid (PFOS)	8.03	F	ng/l	1.88	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.88	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.88	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.88	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.88	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.88	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.88	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.88	--	1

Project Name: 75-79 POND ST. **Lab Number:** L2138430

Project Number: 3395 **Report Date:** 07/28/21

SAMPLE RESULTS

Lab ID: L2138430-02 Date Collected: 07/15/21 13:20

Client ID: WELL-2 Date Received: 07/16/21

Sample Location: ROCKLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	92		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	102		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	93		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**151**	Q	12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	87		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	85		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	94		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**156**	Q	14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	92		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	96		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	79		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	101		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	75		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	81		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	**8**	Q	10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	86		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	73		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	64		22-136

Project Name: 75-79 POND ST.
Lab Number: L2138430
Project Number: 3395
Report Date: 07/28/21

SAMPLE RESULTS

Lab ID: L2138430-03
Client ID: WELL-3
Sample Location: ROCKLAND, MA

Date Collected: 07/15/21 14:25
Date Received: 07/16/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 07/21/21 20:35
Analyst: MP

Extraction Method: ALPHA 23528
Extraction Date: 07/21/21 04:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.86	--	1
Perfluorohexanoic Acid (PFHxA)	2.63		ng/l	1.86	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.86	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.86	--	1
Perfluorooctanoic Acid (PFOA)	3.36		ng/l	1.86	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.86	--	1
Perfluorooctanesulfonic Acid (PFOS)	1.97		ng/l	1.86	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.86	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.86	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.86	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.86	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.86	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.86	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.86	--	1

Project Name: 75-79 POND ST. **Lab Number:** L2138430

Project Number: 3395 **Report Date:** 07/28/21

SAMPLE RESULTS

Lab ID: L2138430-03 Date Collected: 07/15/21 14:25

Client ID: WELL-3 Date Received: 07/16/21

Sample Location: ROCKLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	87		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	105		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	102		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	121		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	87		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	87		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	100		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	92		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	122		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	93		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	101		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	93		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	111		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	85		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	93		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	13		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	93		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	88		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	72		22-136

Project Name: 75-79 POND ST.
Project Number: 3395
Lab Number: L2138430
Report Date: 07/28/21

SAMPLE RESULTS

Lab ID: L2138430-04
Client ID: FIELD BLANK
Sample Location: ROCKLAND, MA

Date Collected: 07/15/21 13:30
Date Received: 07/16/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 07/21/21 20:52
Analyst: MP

Extraction Method: ALPHA 23528
Extraction Date: 07/21/21 04:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.83	--	1
Perfluorohexanoic Acid (PFHxA)	4.05		ng/l	1.83	--	1
Perfluoroheptanoic Acid (PFHpA)	18.4		ng/l	1.83	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.83	--	1
Perfluorooctanoic Acid (PFOA)	7.87		ng/l	1.83	--	1
Perfluorononanoic Acid (PFNA)	50.3		ng/l	1.83	--	1
Perfluorooctanesulfonic Acid (PFOS)	2.14	F	ng/l	1.83	--	1
Perfluorodecanoic Acid (PFDA)	11.3		ng/l	1.83	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.83	--	1
Perfluoroundecanoic Acid (PFUnA)	12.5		ng/l	1.83	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.83	--	1
Perfluorododecanoic Acid (PFDoA)	1.87		ng/l	1.83	--	1
Perfluorotridecanoic Acid (PFTrDA)	3.50		ng/l	1.83	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.83	--	1

Project Name: 75-79 POND ST. **Lab Number:** L2138430

Project Number: 3395 **Report Date:** 07/28/21

SAMPLE RESULTS

Lab ID: L2138430-04 Date Collected: 07/15/21 13:30

Client ID: FIELD BLANK Date Received: 07/16/21

Sample Location: ROCKLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	92		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	106		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	96		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	96		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	98		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	95		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	90		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	91		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	93		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	93		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	91		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	84		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	83		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	97		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	30		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	92		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	89		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	84		22-136

Project Name: 75-79 POND ST.
Project Number: 3395

Lab Number: L2138430
Report Date: 07/28/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 07/21/21 14:27
Analyst: MP

Extraction Method: ALPHA 23528
Extraction Date: 07/21/21 04:35

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-04 Batch: WG1526105-1					
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--

Project Name: 75-79 POND ST.
Project Number: 3395
Lab Number: L2138430
Report Date: 07/28/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 07/21/21 14:27
Analyst: MP

Extraction Method: ALPHA 23528
Extraction Date: 07/21/21 04:35

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-04 Batch: WG1526105-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	120		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	135		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	127		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**145**	Q	12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	125		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	118		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	122		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	118		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	141		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	124		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	122		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	119		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	136		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	92		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	121		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	34		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	103		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	110		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	105		22-136
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	128		10-165
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	117		10-206
1H,1H,2H,2H-Perfluorododecane Sulfonate (M2D4-10:2FTS)	**155**	Q	50-150

Lab Control Sample Analysis
Batch Quality Control

Project Name: 75-79 POND ST.
Project Number: 3395
Lab Number: L2138430
Report Date: 07/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 Batch: WG1526105-2								
Perfluorobutanesulfonic Acid (PFBS)	92		-		65-157	-		30
Perfluorohexanoic Acid (PFHxA)	91		-		69-168	-		30
Perfluoroheptanoic Acid (PFHpA)	92		-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	92		-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	94		-		63-159	-		30
Perfluorononanoic Acid (PFNA)	90		-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	101		-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	90		-		63-171	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	97		-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	87		-		60-153	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	96		-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	90		-		67-153	-		30
Perfluorotridecanoic Acid (PFTrDA)	106		-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	94		-		59-182	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 75-79 POND ST.

Project Number: 3395

Lab Number: L2138430

Report Date: 07/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 Batch: WG1526105-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	101				58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	114				62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	105				70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	126				12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	105				57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	99				60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	102				71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	98				62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	129				14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	102				59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	103				69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	98				62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	125				10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	83				24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	104				55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	31				10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	86				27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	96				48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	95				22-136
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	103				10-165
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	103				10-206
1H,1H,2H,2H-Perfluorododecane Sulfonate (M2D4-10:2FTS)	129				50-150

Matrix Spike Analysis

Batch Quality Control

Project Name: 75-79 POND ST.

Project Number: 3395

Lab Number: L2138430

Report Date: 07/28/21

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1526105-3 QC Sample: L2138386-01 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	13.8	35	46.3	93		-	-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	14.9	35	47.2	92		-	-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	4.06	31.1	33.2	94		-	-		65-157	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	32.8	34.0	104		-	-		37-219	-		30
Perfluorohexanoic Acid (PFHxA)	11.4	35	44.0	93		-	-		69-168	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	32.9	35.2	107		-	-		52-156	-		30
Perfluoroheptanoic Acid (PFHpA)	8.08	35	41.7	96		-	-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	4.42	32	36.7	101		-	-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	43.1	35	76.1	94		-	-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	28.1	33.3	55.1	81		-	-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	33.3	31.6	95		-	-		61-179	-		30
Perfluorononanoic Acid (PFNA)	3.63	35	34.5	88		-	-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	24.5	32.5	56.9	100		-	-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	ND	35	33.1	92		-	-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	33.6	30.9	92		-	-		56-173	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	33.7	30.5	91		-	-		48-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	35	29.8	85		-	-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	35	28.8	82		-	-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	33.7	27.2	81		-	-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	ND	35	29.1	83		-	-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	35	31.2	89		-	-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	ND	35	28.3	81		-	-		67-153	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: 75-79 POND ST.

Project Number: 3395

Lab Number: L2138430

Report Date: 07/28/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1526105-3 QC Sample: L2138386-01 Client ID: MS Sample												
Perfluorotridecanoic Acid (PFTrDA)	ND	35	33.9	97		-	-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	35	29.3	84		-	-		59-182	-		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**367**	Q			10-162
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**277**	Q			12-142
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**420**	Q			14-147
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	118				27-126
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	114				24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	90				55-137
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	81				62-124
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	64				57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	68				60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	82				71-134
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	80				48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	79				22-136
Perfluoro[13C4]Butanoic Acid (MPFBA)	86				58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	64				62-163
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	26				10-112
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	89				69-131
Perfluoro[13C8]Octanoic Acid (M8PFOA)	85				62-129
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	100				59-139
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	82				70-131

Lab Duplicate Analysis
Batch Quality Control

Project Name: 75-79 POND ST.
Project Number: 3395

Lab Number: L2138430
Report Date: 07/28/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1526105-4 QC Sample: L2138386-04 Client ID: DUP Sample						
Perfluorobutanoic Acid (PFBA)	24.3	24.6	ng/l	1		30
Perfluoropentanoic Acid (PFPeA)	9.34	9.73	ng/l	4		30
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	4.24	4.39	ng/l	3		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ng/l	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	2.49	2.55	ng/l	2		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	34.7	28.4	ng/l	20		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	ND	ND	ng/l	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/l	NC		30
Perfluorononanesulfonic Acid (PFNS)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonamide (FOSA)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: 75-79 POND ST.
Project Number: 3395
Lab Number: L2138430
Report Date: 07/28/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1526105-4 QC Sample: L2138386-04 Client ID: DUP Sample						
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/l	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/l	NC		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	87		91		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	103		108		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	102		99		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**181**	Q	**171**	Q	12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	89		93		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	84		87		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	101		100		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	90		92		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**181**	Q	**167**	Q	14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	90		94		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	98		96		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	84		87		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	118		109		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	80		87		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	84		90		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	13		11		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	83		89		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	85		87		48-131

Lab Duplicate Analysis
Batch Quality Control

Project Name: 75-79 POND ST.
Project Number: 3395

Lab Number: L2138430
Report Date: 07/28/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1526105-4 QC Sample: L2138386-04 Client ID: DUP Sample

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	77		81		22-136

Project Name: 75-79 POND ST.
Project Number: 3395

Lab Number: L2138430
Report Date: 07/28/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2138430-01A	Plastic 250ml unpreserved	A	NA		4.6	Y	Absent		A2-537-ISOTOPE(14)
L2138430-01B	Plastic 250ml unpreserved	A	NA		4.6	Y	Absent		A2-537-ISOTOPE(14)
L2138430-02A	Plastic 250ml unpreserved	A	NA		4.6	Y	Absent		A2-537-ISOTOPE(14)
L2138430-02B	Plastic 250ml unpreserved	A	NA		4.6	Y	Absent		A2-537-ISOTOPE(14)
L2138430-03A	Plastic 250ml unpreserved	A	NA		4.6	Y	Absent		A2-537-ISOTOPE(14)
L2138430-03B	Plastic 250ml unpreserved	A	NA		4.6	Y	Absent		A2-537-ISOTOPE(14)
L2138430-04A	Plastic 250ml unpreserved	A	NA		4.6	Y	Absent		A2-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Project Name: 75-79 POND ST.
Project Number: 3395

Lab Number: L2138430
Report Date: 07/28/21

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name:	75-79 POND ST.	**Lab Number:**	L2138430
Project Number:	3395	**Report Date:**	07/28/21

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report

Project Name:	75-79 POND ST.	**Lab Number:**	L2138430
Project Number:	3395	**Report Date:**	07/28/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the reporting limit (RL) for the sample.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where

Report Format: Data Usability Report

Project Name:	75-79 POND ST.	**Lab Number:**	L2138430
Project Number:	3395	**Report Date:**	07/28/21

Data Qualifiers

the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

Project Name:	75-79 POND ST.	**Lab Number:**	L2138430
Project Number:	3395	**Report Date:**	07/28/21

REFERENCES

134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 7/16/21

ALPHA Job #: L2138430

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Conelo Engineers & Scientists
Address: 4 First St
Bridgewater MA
Phone: 508-697-3191
Fax:
Email: OKearney, MBrochu, BKlingler@conelo.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: 75-79 Pond St
Project Location: Rockland, MA
Project #: 3395
Project Manager: Marc Brochu
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: 3395

Regulatory Requirements/Report Limits

State /Fed Program: Criteria RCGW-1

Other Project Specific Requirements/Comments/Detection Limits:

ANALYSIS: PFAAs LCMSMS-16hrs

SAMPLE HANDLING

Filtration
☐ Done
☒ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAAs LCMSMS-16hrs	Sample Specific Comments	TOTAL # BOTTLES
38430-01	WELL-1	7/15/21	1205	GW	DCK	X		2
-02	WELL-2	7/15/21	1320	GW	DCK	X		2
-03	WELL-3	7/15/21	1425	GW	DCK	X		2
-04	Field Blank	7/15/21	1330	GW	DCK	X		2

Container Type: P
Preservative: HCl

Relinquished By:	Date/Time	Received By:	Date/Time
	7/15/21 1700		7/16/21 1250
	7/16/21 1645		7/16/21 1645
	7/16/21 2000		7/16/21 2000
	7/16/21 2122		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.