Goldman
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August 19, 2019

United States Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100 - Mail Code OEP06-01
Boston, MA 02100-3912

Subject: Submittal of Notice of Intent (NOI)
Remedial General Permit
Groundwater Dewatering and Treatment
Massachusetts Avenue and Sidney Street
Cambridge, Massachusetts

To whom it may concern:

The purpose of this letter is to provide a summary and background for the attached NOI and attachments being submitted with this package for the discharge of treated groundwater into the City of Cambridge stormwater system. The project is part of the City of Cambridge PL6 Stormwater Tank Upgrade project in Cambridge, Massachusetts. The groundwater originates beneath Massachusetts Avenue at the intersection with Sidney Street and is the result of a release of gasoline from the vicinity of an abandoned gasoline station. The groundwater contamination was discovered in July 2019 during the excavation under Massachusetts Avenue. The excavation is for a tunnel that will extend from the site of a storm-water storage tank being installed beneath the PL 6 parking lot to the existing sewer system.

The Site is currently used as public roadways, designated Massachusetts Avenue and Sidney Street, within the Central Square section of Cambridge. This portion of Massachusetts Avenue is owned by the City of Cambridge. Refer to Attachment 1 Site locus for the location of the work. Also refer to Attachment 2 for the location of the proposed discharge catch basin, the conveyance stormwater within Massachusetts Avenue and the location of the discharge into the Charles River northeast of the Massachusetts Avenue Bridge.

The project is an MCP site being managed by a Licensed Site Professional, Richard Quateman, for the city. The city has been notified of this discharge and to the stormwater system and has approved it per the attached email in Attachment 3 from Richard Quateman LSP, their on-site representative. Skanska is the General Contractor performing the work.

The work being conducted within Massachusetts Avenue is part of the PL 6 Parking Lot stormwater system improvements being conducted by the City of Cambridge. The PL 6 Parking Lot is located within a disposal site identified as RTN 3-24543. The location of the shaft within Massachusetts Avenue is outside the RTN 3-24543 disposal site boundaries. The discovery of this new release will be performed under a new RTN and a revision to the Construction RAM plan which is currently being prepared by the LSP. The Construction RAM will serve to function as the BMPP and meets the objectives of the general permit.

Construction has stopped for the excavation of the tunnel to allow for this permit to be prepared and submitted. The Proposed treatment plan will collect groundwater form the excavation site and treat it through a fractionation tank, with sand, cloth and granulated carbon filters before discharge to the catch basin located on Massachusetts Avenue. See Figures 3 and 4 & 5 for the design detail and plan of the treatment system.

Notice of Intent Summary

The NOI includes a literature search of the Endangered Species Act (ESA) and the National Historic Preservation Act (NHPA) as provided below:

- Attachment 1 & 2 - Site locus and stormwater system location to be used for the treated discharge.
- Attachment 3 - An email from Richard Quateman, LSP and City Site Representative authorizing the discharge on behalf of the City.
- Attachment 4 - Streamstats calculation sheet indicating the 7Q10 as 29.2 cfs & dilution factor of 263.1 based on the design treatment flow of 50 GPM. Email from MADEP indicating agreement with calculation.
- Attachment 5 - Groundwater Treatment & Technology (GWTT) wastewater treatment design specification, plan and site location equipment layout.
- Attachment 6 - USFWS Endangered Species Correspondence indicating no impact.
- Attachment 7 - Central Square Historic District map showing the work is on the edge of the boundary. All work is subsurface and within the roadway layout and will not impact the District.
- Attachment 8 – Con-Test Analytical data of the influent groundwater and the Charles River Basin surface water quality.

Please feel free to contact me at 781-356-9140 x114 if you have any questions or require further information.

Sincerely yours,
Goldman Environmental Consultants, Inc.

Brian Donahoe

Brian Donahoe, Vice President
Environmental Engineering and Services

Attachments:

NOI Form

II. Suggested Format for the Remediation General Permit Notice of Intent (NOI)

A. General site information:

<table>
<tr><td rowspan="2">1. Name of site:
City of Cambridge PL6 Stormwater Storage Tank</td><td colspan="3">Site address: Mass Ave @ Sydney St
Street:</td></tr>
<tr><td>City: Cambridge</td><td>State: MA</td><td>Zip: 02139</td></tr>
<tr><td rowspan="4">2. Site owner
City of Cambridge

Owner is (check one): ☐ Federal ☐ State/Tribal ☐ Private
■ Other; if so, specify: Municipal</td><td colspan="3">Contact Person: Richard K. Quateman, LSP (Site Representative)</td></tr>
<tr><td colspan="2">Telephone: 978-430-0920</td><td>Email: rquateman@kleinfelder.com</td></tr>
<tr><td colspan="3">Mailing address: One Beacon St., Suite 200
Street:</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02108</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
Skanska USA</td><td colspan="3">Contact Person: Kelly McGonagle</td></tr>
<tr><td colspan="2">Telephone: 617-990-4987</td><td>Email: kelly.mcgonagle@skanska.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: 552 Massachusetts Ave</td></tr>
<tr><td>City: Cambridge</td><td>State: MA</td><td>Zip: 02139</td></tr>
<tr><td>4. NPDES permit number assigned by EPA:

NPDES permit is (check all that apply: ■ RGP ☐ DGP ☐ CGP
☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:</td><td colspan="3">5. Other regulatory program(s) that apply to the site (check all that apply):
■ MA Chapter 21e; list RTN(s):
RTN 3-35803
☐ NH Groundwater Management Permit or Groundwater Release Detection Permit:
☐ CERCLA
☐ UIC Program
☐ POTW Pretreatment
☐ CWA Section 404</td></tr>
</table>

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
Charles River	MA 72-38	Class B Warm Water CSO

Receiving water is (check any that apply): ☐ Outstanding Resource Water ☐ Ocean Sanctuary ☐ territorial sea ☐ Wild and Scenic River

2. Has the operator attached a location map in accordance with the instructions in B, above? (check one): ■ Yes ☐ No

Are sensitive receptors present near the site? (check one): ☐ Yes ■ No
If yes, specify:

3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP. 303(d) listed waterbody. Uses impaired are aesthetic, fish consumption, fish, other aquatic & wildlife, primary/secondary contact recreation, CSO.

4. Indicate the seven day-ten-year low flow (7Q10) of the receiving water determined in accordance with the instructions in Appendix V for sites located in Massachusetts and Appendix VI for sites located in New Hampshire.	29.2 cfs
5. Indicate the requested dilution factor for the calculation of water quality-based effluent limitations (WQBELs) determined in accordance with the instructions in Appendix V for sites in Massachusetts and Appendix VI for sites in New Hampshire.	263.1

6. Has the operator received confirmation from the appropriate State for the 7Q10and dilution factor indicated? (check one): ■ Yes ☐ No
If yes, indicate date confirmation received: 8/16/2019

7. Has the operator attached a summary of receiving water sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): ■ Yes ☐ No

C. Source water information:

1. Source water(s) is (check any that apply):

■ Contaminated groundwater Has the operator attached a summary of influent sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): ■ Yes ☐ No	☐ Contaminated surface water Has the operator attached a summary of influent sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): ☐ Yes ☐ No	☐ The receiving water ☐ A surface water other than the receiving water; if so, indicate waterbody:	☐ Potable water; if so, indicate municipality or origin: ☐ Other; if so, specify:

2. Source water contaminants:	
a. For source waters that are contaminated groundwater or contaminated surface water, indicate are any contaminants present that are not included in the RGP? (check one): ☐ Yes ■ No If yes, indicate the contaminant(s) and the maximum concentration present in accordance with the instructions in Appendix VIII.	b. For a source water that is a surface water other than the receiving water, potable water or other, indicate any contaminants present at the maximum concentration in accordance with the instructions in Appendix VIII? (check one): ☐ Yes ☐ No
3. Has the source water been previously chlorinated or otherwise contains residual chlorine? (check one): ☐ Yes ■ No	

D. Discharge information

1.The discharge(s) is a(n) (check any that apply): ☐ Existing discharge ■ New discharge ☐ New source	
Outfall(s): City of Cambridge, East Mass Ave outfall	Outfall location(s): (Latitude, Longitude) 42-21-25.83 N 71-05-30.52 W
Discharges enter the receiving water(s) via (check any that apply): ■ Direct discharge to the receiving water ☐ Indirect discharge, if so, specify: ☐ A private storm sewer system ■ A municipal storm sewer system If the discharge enters the receiving water via a private or municipal storm sewer system: Has notification been provided to the owner of this system? (check one): ■ Yes ☐ No Has the operator has received permission from the owner to use such system for discharges? (check one): ■ Yes ☐ No, if so, explain, with an estimated timeframe for obtaining permission: Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): ☐ Yes ■ No	
Provide the expected start and end dates of discharge(s) (month/year): 8/26/19-11/1/19 (approximately 10 weeks) Indicate if the discharge is expected to occur over a duration of: ■ less than 12 months ☐ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

<table>
<tr><td>2. Activity Category: (check all that apply)</td><td colspan="2">3. Contamination Type Category: (check all that apply)</td></tr>
<tr><td rowspan="5">☐ I – Petroleum-Related Site Remediation
☐ II – Non-Petroleum-Related Site Remediation
■ III – Contaminated Site Dewatering
☐ IV – Dewatering of Pipelines and Tanks
☐ V – Aquifer Pump Testing
☐ VI – Well Development/Rehabilitation
☐ VII – Collection Structure Dewatering/Remediation
☐ VIII – Dredge-Related Dewatering</td><td colspan="2">a. If Activity Category I or II: (check all that apply)

☐ A. Inorganics
☐ B. Non-Halogenated Volatile Organic Compounds
☐ C. Halogenated Volatile Organic Compounds
☐ D. Non-Halogenated Semi-Volatile Organic Compounds
☐ E. Halogenated Semi-Volatile Organic Compounds
☐ F. Fuels Parameters</td></tr>
<tr><td colspan="2">b. If Activity Category III, IV, V, VI, VII or VIII: (check either G or H)</td></tr>
<tr><td>■ G. Sites with Known Contamination</td><td>☐ H. Sites with Unknown Contamination</td></tr>
<tr><td>c. If Category III-G, IV-G, V-G, VI-G, VII-G or VIII-G: (check all that apply)

■ A. Inorganics
■ B. Non-Halogenated Volatile Organic Compounds
☐ C. Halogenated Volatile Organic Compounds
■ D. Non-Halogenated Semi-Volatile Organic Compounds
☐ E. Halogenated Semi-Volatile Organic Compounds
☐ F. Fuels Parameters</td><td>d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply</td></tr>
</table>

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✔	1	4500NH3	24	70		Report mg/L	---
Chloride		✔	1	300.0	10000	150000		Report µg/l	---
Total Residual Chlorine		✔	1	4500 CLG	20	48		0.2 mg/L	
Total Suspended Solids		✔	1	2540D	2000	10000		30 mg/L	---
Antimony		✔	1	200.8	1.0	1.1		206 µg/L	
Arsenic		✔	1	200..8	0.80	1.4		104 µg/L	
Cadmium	✔		1	200.8	0.20	ND		10.2 µg/L	
Chromium III		✔	1	200.8	1	1.6		323 µg/L	
Chromium VI	✔		1	3500CrB	4.0	ND		323 µg/L	
Copper		✔	1	200.8	1.0	4.4		242 µg/L	
Iron		✔	1	200.7	50	530		5,000 µg/L	
Lead		✔	1	200.8	0.50	7.7		160 µg/L	
Mercury	✔		1	245.1	0.10	ND		0.739 µg/L	
Nickel	✔		1	200.8	5.0	ND		1,450 µg/L	
Selenium	✔		1	200.8	1.6	ND		235.8 µg/L	
Silver	✔		1	200.8	0.20	ND		35.1 µg/L	
Zinc	✔		1	200.8	10	ND		420 µg/L	
Cyanide	✔		1	4500CNE	1.0	ND		178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX		✔	1	624.1	0.92	<8.86		100 µg/L	---
Benzene		✔	1	624.1	0.180	<1.0		5.0 µg/L	---
1,4 Dioxane		✔	1	624.1	3.50	<50.0		200 µg/L	---
Acetone		✔	1	624.1	0.540	<50.0		7.97 mg/L	---
Phenol		✔	1	420.1	50	240		1,080 µg/L	

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
C. Halogenated VOCs									
Carbon Tetrachloride		✔	1	624.1	0.110	<2.00		4.4 µg/L	
1,2 Dichlorobenzene		✔	1	624.1	0.160	<2.00		600 µg/L	---
1,3 Dichlorobenzene		✔	1	624.1	0.120	<2.00		320 µg/L	---
1,4 Dichlorobenzene		✔	1	624.1	0.130	<2.00		5.0 µg/L	---
Total dichlorobenzene		✔	1	624.1	0.41	<6.00		763 µg/L in NH	---
1,1 Dichloroethane		✔	1	624.1	0.160	<2.00		70 µg/L	---
1,2 Dichloroethane		✔	1	624.1	0.410	<2.00		5.0 µg/L	---
1,1 Dichloroethylene		✔	1	624.1	0.320	<2.00		3.2 µg/L	---
Ethylene Dibromide		✔	1	504.1	0.020	ND		0.05 µg/L	---
Methylene Chloride		✔	1	624.1	0.640	<5.00		4.6 µg/L	---
1,1,1 Trichloroethane		✔	1	624.1	0.200	<2.00		200 µg/L	---
1,1,2 Trichloroethane		✔	1	624.1	0.160	<2.0		5.0 µg/L	---
Trichloroethylene		✔	1	624.1	0.240	<2.00		5.0 µg/L	---
Tetrachloroethylene		✔	1	624.1	0.180	<2.00		5.0 µg/L	
cis-1,2 Dichloroethylene		✔	1	624.1	0.0500	<1.00		70 µg/L	---
Vinyl Chloride		✔	1	624.1	0.450	<2.0		2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates		✔	1	625.1	49.06	<49.06		190 µg/L	
Diethylhexyl phthalate		✔	1	625.1	0.96	<0.96		101 µg/L	
Total Group I PAHs		✔	1	625.1	0.93	<0.93		1.0 µg/L	---
Benzo(a)anthracene		✔	1	625.1	0.048	<0.048		As Total PAHs	
Benzo(a)pyrene		✔	1	625.1	0.096	<0.096			
Benzo(b)fluoranthene		✔	1	625.1	0.048	<0.048			
Benzo(k)fluoranthene		✔	1	625.1	0.19	<0.19			
Chrysene		✔	1	625.1	0.19	<0.19			
Dibenzo(a,h)anthracene		✔	1	625.1	0.19	<0.19			
Indeno(1,2,3-cd)pyrene		✔	1	625.1	0.19	<0.19			

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
Total Group II PAHs		✔	1	625.1	5.618	<5.618		100 µg/L	---
Naphthalene		✔	1	625.1	0.96	<0.96		20 µg/L	---
E. Halogenated SVOCs									
Total PCBs		✔	1	608.3	0.57	<.7		0.000064 µg/L	---
Pentachlorophenol		✔	1	625.1	0.96	<0.96		1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons		✔		624.1	31.76	<72.5		5.0 mg/L	---
Ethanol		✔	1	624.1	27.9	<50.0		Report mg/L	---
Methyl-tert-Butyl Ether		✔	1	624.1	0.250	<2.00		70 µg/L	
tert-Butyl Alcohol		✔	1	624.1	3.50	<20.0		120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether		✔	1	624.1	0.110	<0.500		90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC_{50}, additional pollutants present); if so, specify:									
Hardness - influent		✔	1	2340C	2000	80000			
Hardness - Receiving Water		✔	1	200.7		55000			

E. Treatment system information

1. Indicate the type(s) of treatment that will be applied to effluent prior to discharge: (check all that apply)

☐ Adsorption/Absorption ☐ Advanced Oxidation Processes ☐ Air Stripping ■ Granulated Activated Carbon ("GAC")/Liquid Phase Carbon Adsorption
☐ Ion Exchange ☐ Precipitation/Coagulation/Flocculation ■ Separation/Filtration ☐ Other; if so, specify:

2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge.
The temporary treatment system consists of an influent settling tank, electric submersible pump, bag filters, liquid phase carbon adsorbers and a totalizing flow meter.

Identify each major treatment component (check any that apply):
☐ Fractionation tanks☐ Equalization tank ☐ Oil/water separator ■ Mechanical filter ■ Media filter
☐ Chemical feed tank ☐ Air stripping unit ■ Bag filter ☐ Other; if so, specify:

Indicate if either of the following will occur (check any that apply):
☐ Chlorination ☐ De-chlorination

3. Provide the **design flow capacity** in gallons per minute (gpm) of the most limiting component. Indicate the most limiting component: 50 gpm Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	
Provide the proposed maximum effluent flow in gpm.	50
Provide the average effluent flow in gpm.	50
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	

4. Has the operator attached a schematic of flow in accordance with the instructions in E, above? (check one): ■ Yes ☐ No

F. Chemical and additive information

1. Indicate the type(s) of chemical or additive that will be applied to effluent prior to discharge or that may otherwise be present in the discharge(s): (check all that apply)

☐ Algaecides/biocides ☐ Antifoams ☐ Coagulants ☐ Corrosion/scale inhibitors ☐ Disinfectants ☐ Flocculants ☐ Neutralizing agents ☐ Oxidants ☐ Oxygen ☐ scavengers ☐ pH conditioners ☐ Bioremedial agents, including microbes ☐ Chlorine or chemicals containing chlorine ☐ Other; if so, specify:

2. Provide the following information for each chemical/additive, using attachments, if necessary:

a. Product name, chemical formula, and manufacturer of the chemical/additive;
b. Purpose or use of the chemical/additive or remedial agent;
c. Material Safety Data Sheet (MSDS) and Chemical Abstracts Service (CAS) Registry number for each chemical/additive;
d. The frequency (hourly, daily, etc.), duration (hours, days), quantity (maximum and average), and method of application for the chemical/additive;
e. Any material compatibility risks for storage and/or use including the control measures used to minimize such risks; and
f. If available, the vendor's reported aquatic toxicity (NOAEL and/or LC50 in percent for aquatic organism(s)).

3. Has the operator attached an explanation which demonstrates that the addition of such chemicals/additives may be authorized under this general permit in accordance with the instructions in F, above? (check one): ☐ Yes ☐ No; if no, has the operator attached data that demonstrates each of the 126 priority pollutants in CWA Section 307(a) and 40 CFR Part 423.15(j)(1) are non-detect in discharges with the addition of the proposed chemical/additive? (check one): ☐ Yes ☐ No

G. Endangered Species Act eligibility determination

1. Indicate under which criterion the discharge(s) is eligible for coverage under this general permit:

■ **FWS Criterion A**: No endangered or threatened species or critical habitat are in proximity to the discharges or related activities or come in contact with the "action area".

☐ **FWS Criterion B**: Formal or informal consultation with the FWS under section 7 of the ESA resulted in either a no jeopardy opinion (formal consultation) or a written concurrence by FWS on a finding that the discharges and related activities are "not likely to adversely affect" listed species or critical habitat (informal consultation). Has the operator completed consultation with FWS? (check one): ☐ Yes ☐ No; if no, is consultation underway? (check one): ☐ Yes ☐ No

☐ **FWS Criterion C**: Using the best scientific and commercial data available, the effect of the discharges and related activities on listed species and critical habitat have been evaluated. Based on those evaluations, a determination is made by EPA, or by the operator and affirmed by EPA, that the discharges and related activities will have "no effect" on any federally threatened or endangered listed species or designated critical habitat under the jurisdiction of the FWS. This determination was made by: (check one) ☐ the operator ☐ EPA ☐ Other; if so, specify:

☐ **NMFS Criterion**: A determination made by EPA is affirmed by the operator that the discharges and related activities will have "no effect" or are "not likely to adversely affect" any federally threatened or endangered listed species or critical habitat under the jurisdiction of NMFS and will not result in any take of listed species. Has the operator previously completed consultation with NMFS? (check one): ☐ Yes ☐ No

2. Has the operator attached supporting documentation of ESA eligibility in accordance with the instructions in Appendix I, and G, above? (check one): ■ Yes ☐ No

Does the supporting documentation include any written concurrence or finding provided by the Services? (check one): ☐ Yes ■ No; if yes, attach.

H. National Historic Preservation Act eligibility determination

1. Indicate under which criterion the discharge(s) is eligible for coverage under this general permit:

☐ **Criterion A**: No historic properties are present. The discharges and discharge-related activities (e.g., BMPs) do not have the potential to cause effects on historic properties.

■ **Criterion B**: Historic properties are present. Discharges and discharge related activities do not have the potential to cause effects on historic properties.

☐ **Criterion C**: Historic properties are present. The discharges and discharge-related activities have the potential to have an effect or will have an adverse effect on historic properties.

2. Has the operator attached supporting documentation of NHPA eligibility in accordance with the instructions in H, above? (check one): ■ Yes ☐ No

Does the supporting documentation include any written agreement with the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (TPHO), or other tribal representative that outlines measures the operator will carry out to mitigate or prevent any adverse effects on historic properties? (check one): ☐ Yes ■ No

I. Supplemental information

Describe any supplemental information being provided with the NOI. Include attachments if required or otherwise necessary.

Has the operator attached data, including any laboratory case narrative and chain of custody used to support the application? (check one): ■ Yes ☐ No

Has the operator attached the certification requirement for the Best Management Practices Plan (BMPP)? (check one): ■ Yes ☐ No

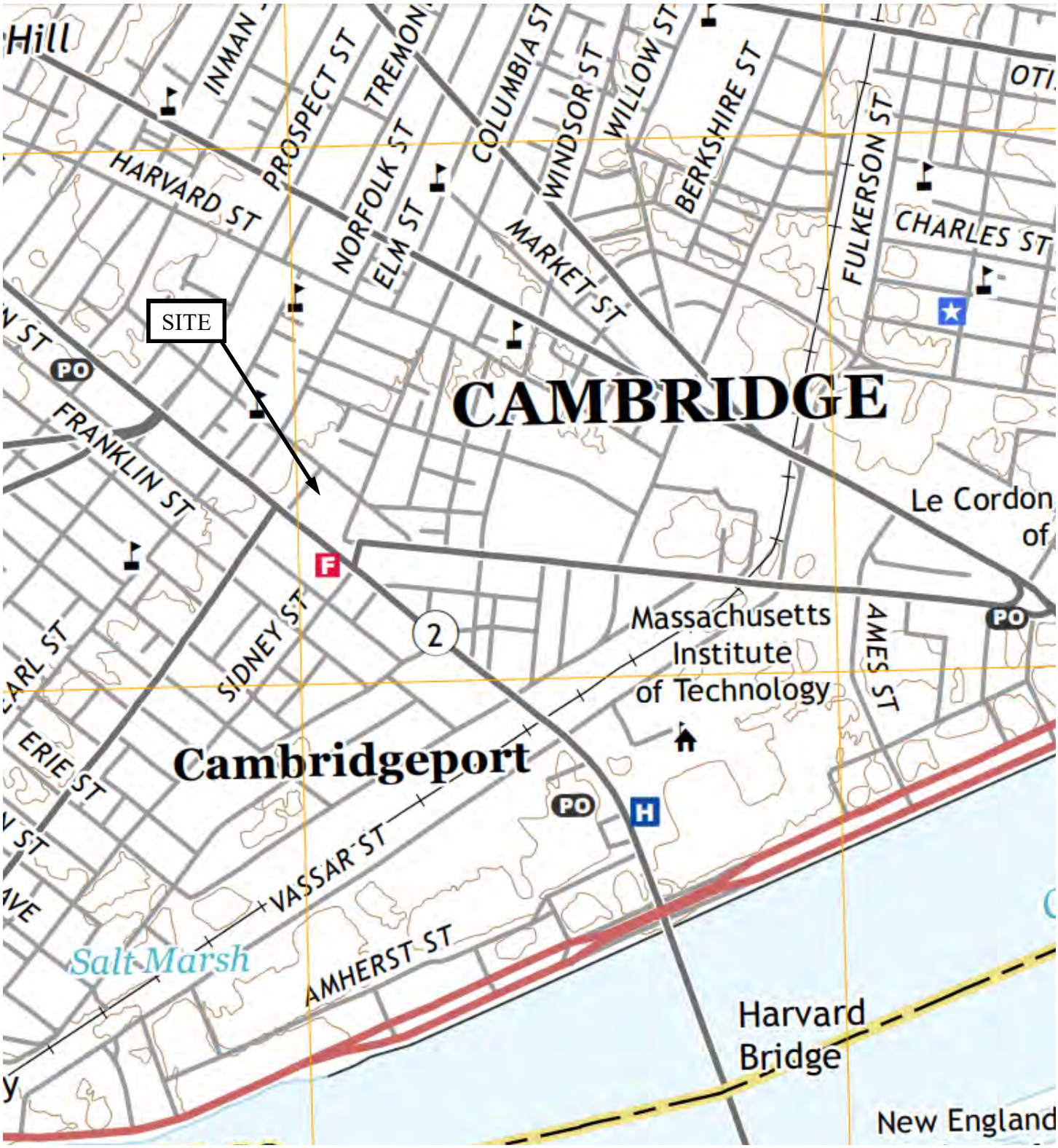
J. Certification requirement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

BMPP certification statement: A BMPP meeting the requirements of this general permit will be developed and implemented prior to the initiation of discharge.	
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ☐ No ■
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐ NA ☐
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ■ No ☐ NA ☐
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Check one: Yes ☐ No ☐ NA ■
Signature: Brian Donahue	Date: 8/19/2019
Print Name and Title: Brian Donahoe, VP, Goldman Environmental Consultants	

Attachment 1

Site Locus



USGS 7.5 Minute Topographic, dated 2018

Boston South
Massachusetts Quadrangle

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Braintree, MA 02184
(781)356-9140 Fax: (781)356-9147
www.goldmanenvironmental.com

SITE LOCUS

30 Bishop Allen Drive
Cambridge, MA

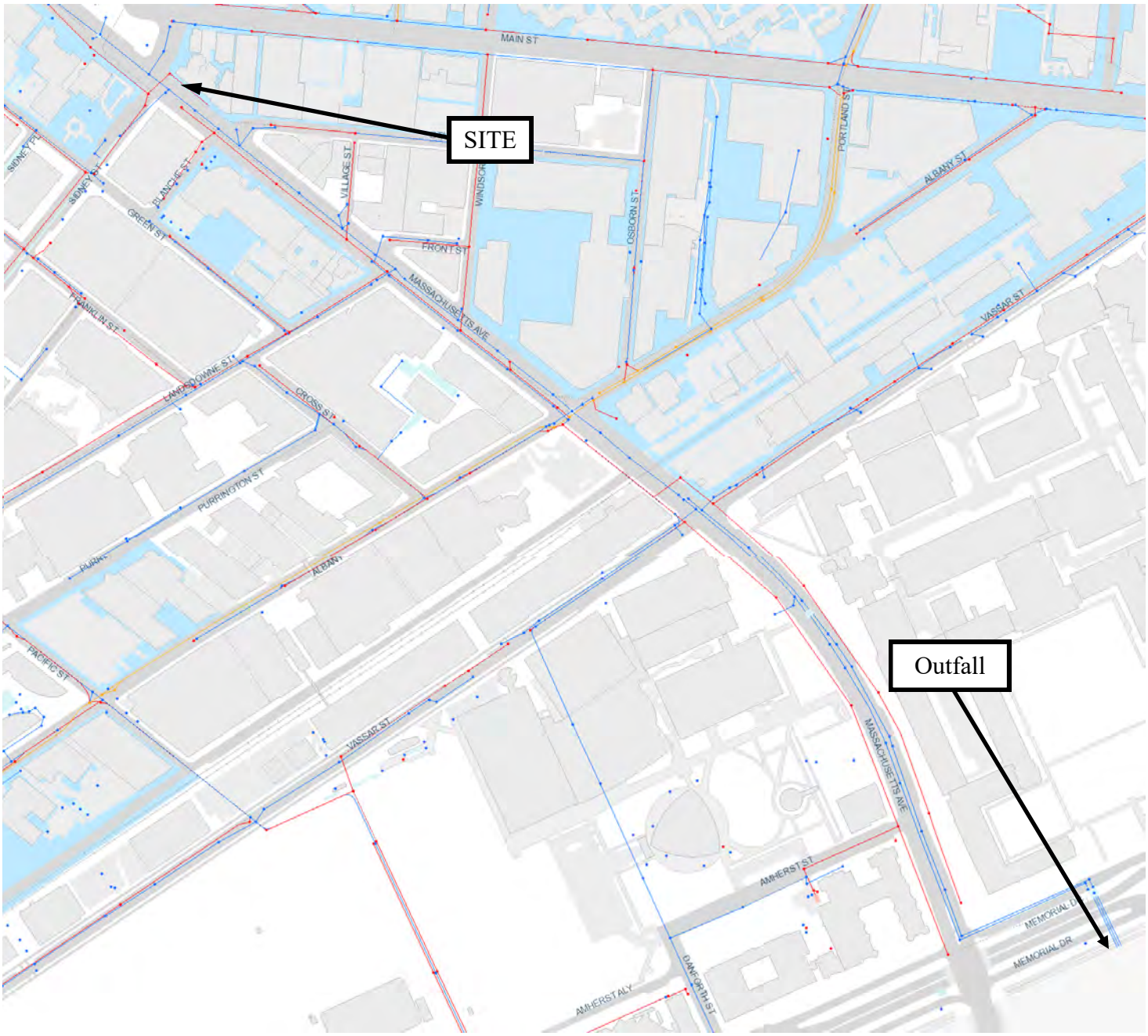
GEC Project #: 1883-8010

Figure 1

Attachment 2

Stormwater System

Outfall Location



City of Cambridge GIS

Goldman Environmental Consultants, Inc.
60 Brooks Drive
Braintree, MA 02184
(781)356-9140 Fax: (781)356-9147
www.goldmanenvironmental.com

Outfall Location

Sidney St @ Mass Ave
Cambridge, MA

GEC Project #: 1883-9060

Figure 2

Attachment 3

Email from City of Cambridge

Site Representative

From:	Richard Quateman
To:	Brian Donahoe
Cc:	Friedman, Jerry; Katherine Goyette; Edmund Mitiguy
Subject:	PL-6 Discharge of treated groundwater to Cambridge drainage system
Date:	Wednesday, August 14, 2019 10:50:15 AM
Attachments:	image003.png

Brian, I am writing as the Licensed Site Professional (LSP) for City of Cambridge on the PL-6 Stormwater improvements project.

On behalf of the City, I am providing notification that discharge of treated groundwater into the city-owned stormwater system is acceptable provided all NPDES Remediation General Permit discharge standards are met.

Richard K. Quateman, LSP, CHMM
Senior Principal Professional

One Beacon Street, Suite 8100
Boston, MA 02108
o| 617.497.7800
d| 617.498.4735

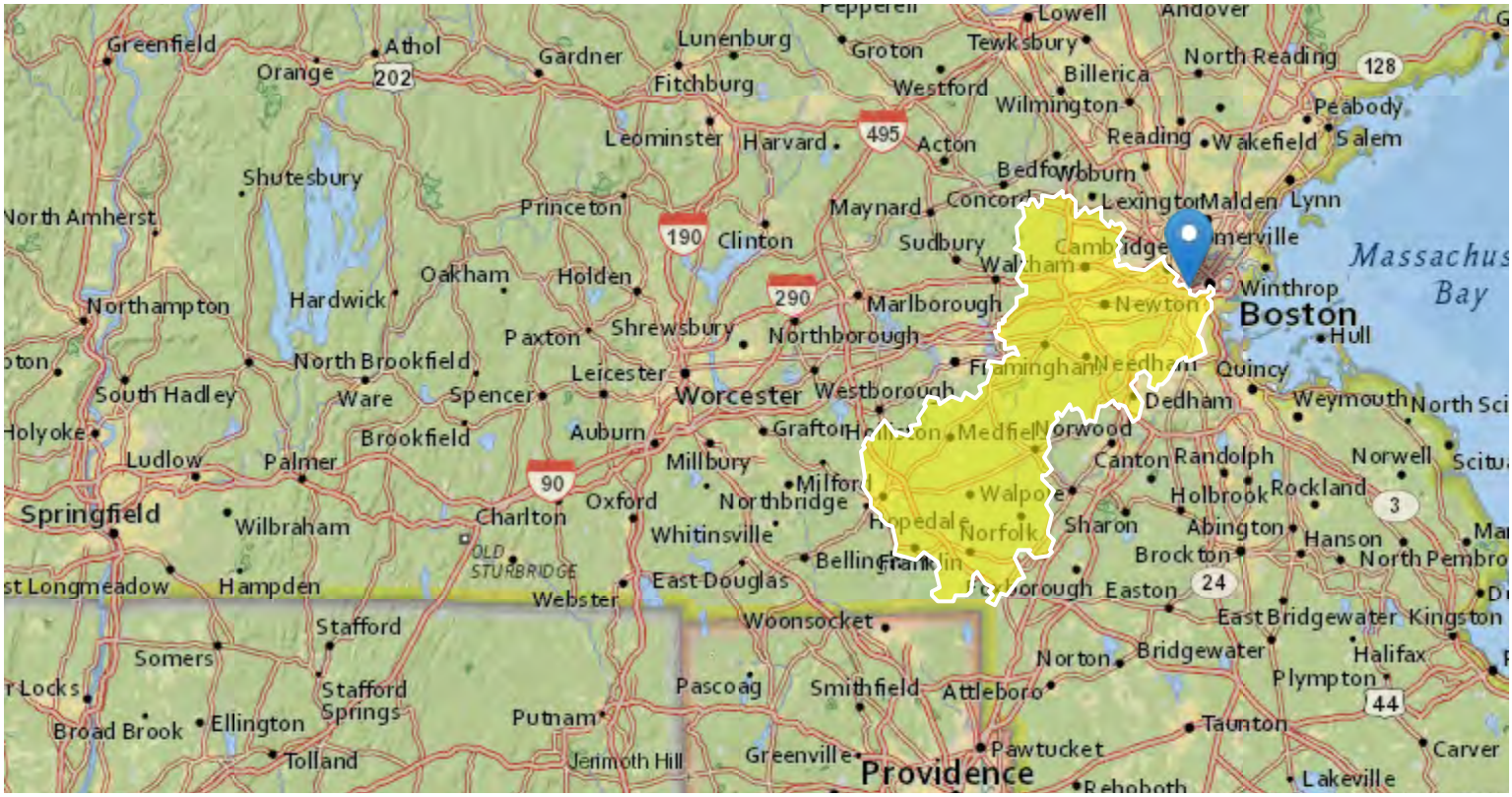
Attachment 4

Streamstats Calculation

And Dilution Factor Calculations

StreamStats Report

Region ID: MA
Workspace ID: MA20190815172905056000
Clicked Point (Latitude, Longitude): 42.35477, -71.09141
Time: 2019-08-15 13:26:58 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	307	square miles
BSLDEM250	Mean basin slope computed from 1:250K DEM	2.341	percent
DRFTPERSTR	Area of stratified drift per unit of stream length	0.25	square mile per mile
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless

Low-Flow Statistics Parameters[Statewide Low Flow WRIR00 4135]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	307	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	2.341	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	0.25	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1

Low-Flow Statistics Disclaimers[Statewide Low Flow WRIR00 4135]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report[Statewide Low Flow WRIR00 4135]

Statistic	Value	Unit
7 Day 2 Year Low Flow	57.3	ft^3/s
7 Day 10 Year Low Flow	29.2	ft^3/s

Low-Flow Statistics Citations

Ries, K.G., III,2000, Methods for estimating low-flow statistics for Massachusetts streams: U.S. Geological Survey Water Resources Investigations Report 00-4135, 81 p. (http://pubs.usgs.gov/wri/wri004135/)

Application Version: 4.3.8

Enter number values in green boxes below

Enter values in the units specified

↓

18.87	Q_R = Enter upstream flow in **MGD**
0.072	Q_P = Enter discharge flow in **MGD**
0	Downstream 7Q10

Enter a dilution factor, if other than zero

↓

0

Enter values in the units specified

↓

80	C_d = Enter influent hardness in **mg/L** $CaCO_3$
55	C_s = Enter receiving water hardness in **mg/L** $CaCO_3$

Enter **receiving water** concentrations in the units specified

↓

6.5	pH in **Standard Units**
25	Temperature in **°C**
0.056	Ammonia in **mg/L**
55	Hardness in **mg/L** $CaCO_3$
0	Salinity in **ppt**
0	Antimony in **µg/L**
0	Arsenic in **µg/L**
0	Cadmium in **µg/L**
1.6	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
5.6	Copper in **µg/L**
1200	Iron in **µg/L**
8.7	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
0	Zinc in **µg/L**

Enter **influent** concentrations in the units specified

↓

48	TRC in **µg/L**
0.07	Ammonia in **mg/L**
1.1	Antimony in **µg/L**
1.4	Arsenic in **µg/L**
0	Cadmium in **µg/L**
1.6	Chromium III in **µg/L**
1.6	Chromium VI in **µg/L**
4.4	Copper in **µg/L**
530	Iron in **µg/L**
7.7	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
0	Zinc in **µg/L**
0	Cyanide in **µg/L**
240	Phenol in **µg/L**
0	Carbon Tetrachloride in **µg/L**
0	Tetrachloroethylene in **µg/L**
	Total Phthalates in **µg/L**
0	Diethylhexylphthalate in **µg/L**
0	Benzo(a)anthracene in **µg/L**
0	Benzo(a)pyrene in **µg/L**
0	Benzo(b)fluoranthene in **µg/L**
0	Benzo(k)fluoranthene in **µg/L**
0	Chrysene in **µg/L**
0	Dibenzo(a,h)anthracene in **µg/L**
0	Indeno(1,2,3-cd)pyrene in **µg/L**
0	Methyl-tert butyl ether in **µg/L**

Dilution Factor	263.1					
A. Inorganics	TBEL applies if bolded		WQBEL applies if bolded		Compliance Level applies if shown	
Ammonia	**Report**	mg/L	---			
Chloride	**Report**	µg/L	---			
Total Residual Chlorine	**0.2**	mg/L	2894	µg/L	---	µg/L
Total Suspended Solids	**30**	mg/L	---			
Antimony	**206**	µg/L	168373	µg/L		
Arsenic	**104**	µg/L	2631	µg/L		
Cadmium	**10.2**	µg/L	45.7771	µg/L		
Chromium III	**323**	µg/L	13495.2	µg/L		
Chromium VI	**323**	µg/L	3008.2	µg/L		
Copper	**242**	µg/L	7.0	µg/L		
Iron	**5000**	µg/L	1000	µg/L		
Lead	160	µg/L	**1.49**	µg/L		
Mercury	**0.739**	µg/L	238.32	µg/L		
Nickel	**1450**	µg/L	8287.8	µg/L		
Selenium	**235.8**	µg/L	1315.4	µg/L		
Silver	**35.1**	µg/L	357.1	µg/L		
Zinc	**420**	µg/L	19021.9	µg/L		
Cyanide	**178**	mg/L	1368.0	µg/L	---	µg/L
B. Non-Halogenated VOCs						
Total BTEX	**100**	µg/L	---			
Benzene	**5.0**	µg/L	---			
1,4 Dioxane	**200**	µg/L	---			
Acetone	**7970**	µg/L	---			
Phenol	**1,080**	µg/L	78925	µg/L		
C. Halogenated VOCs						
Carbon Tetrachloride	**4.4**	µg/L	420.9	µg/L		
1,2 Dichlorobenzene	**600**	µg/L	---			
1,3 Dichlorobenzene	**320**	µg/L	---			
1,4 Dichlorobenzene	**5.0**	µg/L	---			
Total dichlorobenzene	**---**	µg/L	---			
1,1 Dichloroethane	**70**	µg/L	---			
1,2 Dichloroethane	**5.0**	µg/L	---			
1,1 Dichloroethylene	**3.2**	µg/L	---			
Ethylene Dibromide	**0.05**	µg/L	---			
Methylene Chloride	**4.6**	µg/L	---			
1,1,1 Trichloroethane	**200**	µg/L	---			
1,1,2 Trichloroethane	**5.0**	µg/L	---			
Trichloroethylene	**5.0**	µg/L	---			
Tetrachloroethylene	**5.0**	µg/L	868.2	µg/L		
cis-1,2 Dichloroethylene	**70**	µg/L	---			
Vinyl Chloride	**2.0**	µg/L	---			
D. Non-Halogenated SVOCs						
Total Phthalates	**190**	µg/L	---	µg/L		
Diethylhexyl phthalate	**101**	µg/L	578.8	µg/L		

Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---			
Benzo(a)anthracene	**1.0**	µg/L	0.9997	µg/L	---	µg/L
Benzo(a)pyrene	**1.0**	µg/L	0.9997	µg/L	---	µg/L
Benzo(b)fluoranthene	**1.0**	µg/L	0.9997	µg/L	---	µg/L
Benzo(k)fluoranthene	**1.0**	µg/L	0.9997	µg/L	---	µg/L
Chrysene	**1.0**	µg/L	0.9997	µg/L	---	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.9997	µg/L	---	µg/L
Indeno(1,2,3-cd)pyrene	**1.0**	µg/L	0.9997	µg/L	---	µg/L
Total Group II Polycyclic Aromatic Hydrocarbons	**100**	µg/L	---			
Naphthalene	**20**	µg/L	---			
E. Halogenated SVOCs						
Total Polychlorinated Biphenyls	**0.000064**	µg/L	---		0.5	µg/L
Pentachlorophenol	**1.0**	µg/L	---			
F. Fuels Parameters						
Total Petroleum Hydrocarbons	**5.0**	mg/L	---			
Ethanol	**Report**	mg/L	---			
Methyl-tert-Butyl Ether	**70**	µg/L	5262	µg/L		
tert-Butyl Alcohol	**120**	µg/L	---			
tert-Amyl Methyl Ether	**90**	µg/L	---			

From: Ruan, Xiaodan (DEP)
To: Brian Donahoe
Cc: Vakalopoulos, Catherine (DEP)
Subject: RE: RGP 7Q10 and dilution calculation/
Date: Friday, August 16, 2019 3:02:29 PM

Hi Brian,

I can confirm that the 7Q10 value of 29.2 cfs and the dilution calculation of 263.1 for the proposed discharge from the location near the intersection of Massachusetts Ave and Sidney Street in Cambridge are correct.

To assist you with filling out the NOI for coverage under the RGP, this segment of the Charles River is identified as MA72-38, classified as Class B, and is not listed as an Outstanding Resource Water. There are two approved TMDLs for pathogens and nutrients. To see the causes of impairments, go to: https://www.mass.gov/files/documents/2016/08/sa/14list2_0.pdf and search for "MA72-38".

Since this is a *current* MCP site, you do not need to apply with MassDEP.

Please let me know if you have any question.

Thanks,
Xiaodan

From: Vakalopoulos, Catherine (DEP)
Sent: Friday, August 16, 2019 9:18 AM
To: Ruan, Xiaodan (DEP)
Cc: bdonahoe@goldmanenvironmental.com
Subject: FW: RGP 7Q10 and dilution calculation/

Hi Xiaodan,
Please let me know if you have time to look at this today. I don't know why it went to my junk box – that's why I just saw it.
Thanks,
Cathy

From: Brian Donahoe [mailto:bdonahoe@goldmanenvironmental.com]
Sent: Wednesday, August 14, 2019 2:02 PM
To: Vakalopoulos, Catherine (DEP)
Cc: Karen Horne
Subject: RGP 7Q10 and dilution calculation/

Hi Catherine, we are preparing an application under the EPA/Massachusetts Remediation General Permit for a project being constructed near the intersection of Massachusetts Ave and Sidney Street in Cambridge. A locus and a stormwater drainage plan obtained form the Cambridge DPW is attached for reference. The project is being supervised by an LSP working for the city and is regulated as an MCP site.

The Streamstats 7Q10 value was determined to be 29.2 cfs and the dilution calculation was 263.1 based on a treatment design flow of 50 gpm. Please confirm these are approved so we can complete the application. Thanks

Brian Donahoe, Vice President
Environmental Services & Engineering
Goldman Environmental Consultants, Inc.
60 Brooks Drive
Braintree, MA 02184
Mobile: 617-947-0957
Office: 781-356-9140 x 114
Fax: 781-356-9147

Attachment 5

Groundwater Treatment Technology (GWTT)

Wastewater Treatment Design Specifications, Plan and Site Location
Equipment Layout

GWTT
Ground/Water Treatment & Technology, LLC

39 River Street
Millbury, MA 01527
Tel: (800) 962-4150
(508) 755-7075
Fax: (508)755-7206

August 7, 2019

Ms. Kelly McGonagle
Skanska USA
1365 Main Street
Waltham, MA 02451

Via email: ed.breed@skanska.com

Reference: Proposal – Temporary Water Treatment System
City of Cambridge PL6 Stormwater Storage Tank
GWTT Ref # 8942_Rev.1

Dear Ms. McGonagle:

Thank you for your inquiry regarding rental treatment equipment supplied by Ground/Water Treatment & Technology, LLC (GWTT). The following is our **revised** proposal for a rental water treatment system designed to treat a maximum of 50 gpm of water generated from construction dewatering operations.

Our proposed system is based exclusively on your recent conversations with Derek Lonczak of GWTT and his site visit from 8/2/19.

It is our understanding that the raw water is expected to contain low levels of Total Suspended Solids (TSS), Petroleum Hydrocarbons and Volatile Organic Compounds (VOCs) which must be reduced prior to discharge via a valid discharge permit obtained by others. We have assumed that any metals present in the raw water stream are associated with the TSS and can be removed by gravity settling followed by mechanical filtration via bag filters. If these unit processes are not sufficient to reduce the metals to below their discharge levels, the treatment system can be enhanced to include coagulation/flocculation/clarification and/or ion exchange units at an additional cost.

Our proposed temporary treatment system consists of an influent settling tank, electric submersible pump, bag filters, liquid phase carbon adsorbers and a totalizing flow meter as described below.

The pumps provided in the proposed treatment system will turn on and off automatically based on pump control floats installed in the influent settling tank. However, the system is not designed to run unattended for long periods of time as an Operator will be required to periodically change out the bag filters in the bag filter housings. If the bag filters are not properly operated and maintained, the differential pressure across the filter housings can rise to the point that the transfer pump cannot pump water from the influent settling tank faster than water is introduced into the influent settling tank. The water level in the influent settling tank will rise, activating a high level alarm float which will activate a local high level alarm light on the pump skid. The default high level alarm does not shut off the dewatering pumps although this can be provided as an adder upon review of the dewatering pump

control panel. If the bag filters are not changed, the water level in the influent settling tank will continue to rise and will eventually overflow.

Please note if sumps will be utilized in the dewatering process, it will be in your best interests to install properly constructed sumps (sumps by others) to limit the amount of TSS entering the treatment system. Limiting the amount of TSS entering the treatment system will not only reduce the amount of sediment needed to be removed and disposed from the influent settling tank at the conclusion of the rental period, but will also help to meet TSS and metals discharge limits, and also reduce the frequency of bag filter changeouts and the need for carbon media backwashes.

In preparing this proposal, we have assumed that dewatering pumps and associated hoses, a source of 115/230 volt, 1 phase electrical power, lifting equipment during mobilization/demobilization, labor to assist during mobilization/demobilization, union coverage of any kind, cleaning of the influent settling tank at the conclusion of the rental period, a source of clean water to hydrate the carbon adsorbers at least 24 hours prior to startup, removal/analysis/disposal of carbon media **will be provided by others.**

Proposed Temporary Treatment System - 50 gpm

1. One (1) open top, 5,000-gallon influent settling tank (clarifier without media) with over/under weirs.

2. One (1) solo electric submersible pump skid containing one (1) full capacity pump - capable of 50 gpm @ 50' TDH, supplied with 1.5 Hp, 115/230V, 1 phase motors, an automatic float control panel, an integrated control panel, and 25' of feed wire.

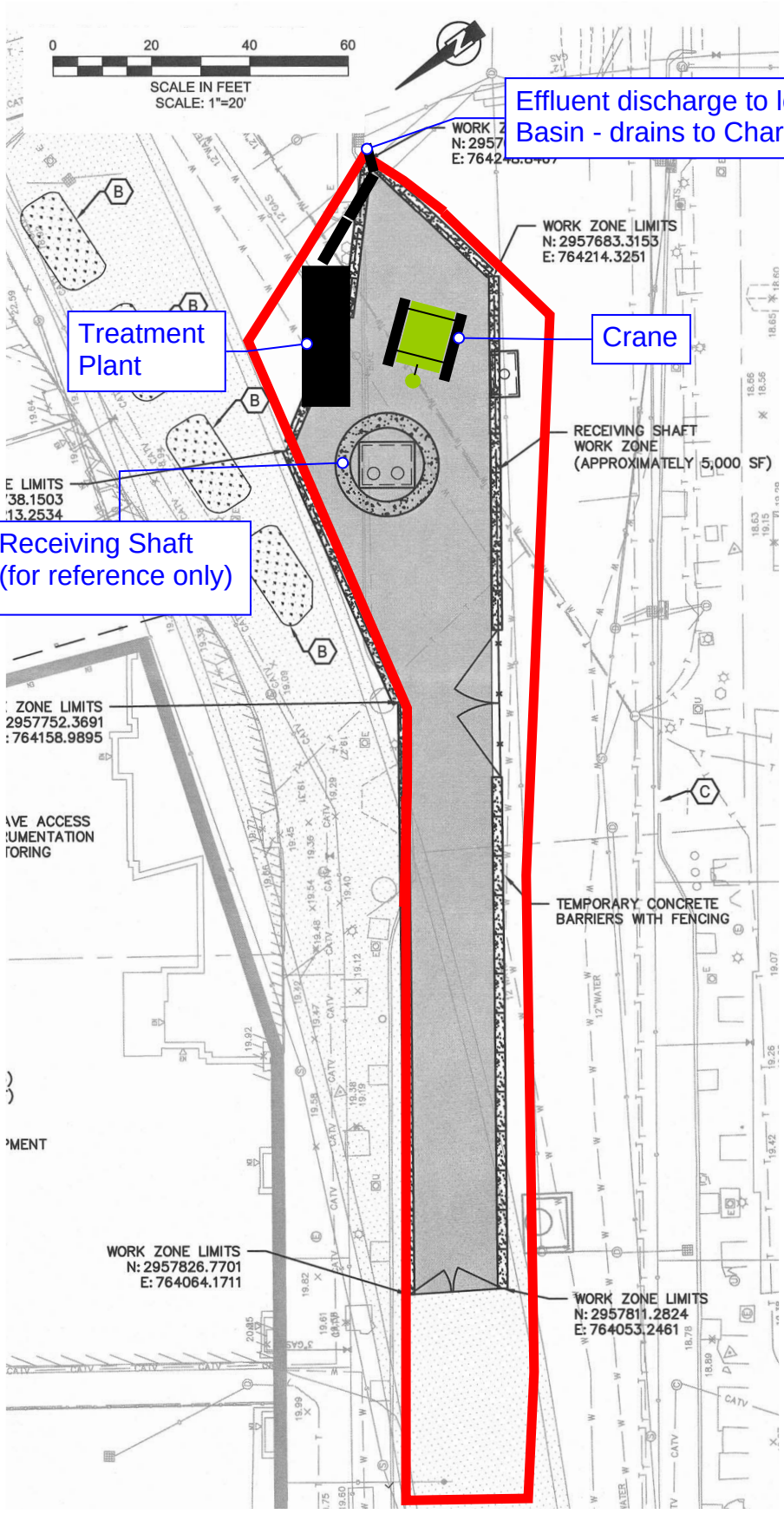
3. One (1) duplex 1-bag filter housing skid consisting of two (2) full capacity bag filter housings - one (1) operating, one (1) installed standby - complete with isolation valves, pressure gauges and sample taps. The use of a duplex bag filter skid will enable you to change the bags in one (1) of the filter housings without having to shut down the dewatering or transfer pumps.

4. Two (2) non-Code carbon adsorbers plumbed in lead-lag series operation, each pre-loaded with 2,000 lbs of reactivated carbon media. The vessels will be provided complete with isolation valves, pressure gauges and sample taps.

5. One (1) 2" effluent flow meter with totalizer.

6. Piping and/or flexible hose from the influent settling tank to the flow meter

7. Seven (7) 50' lengths of 2" layflat hose (350' total)

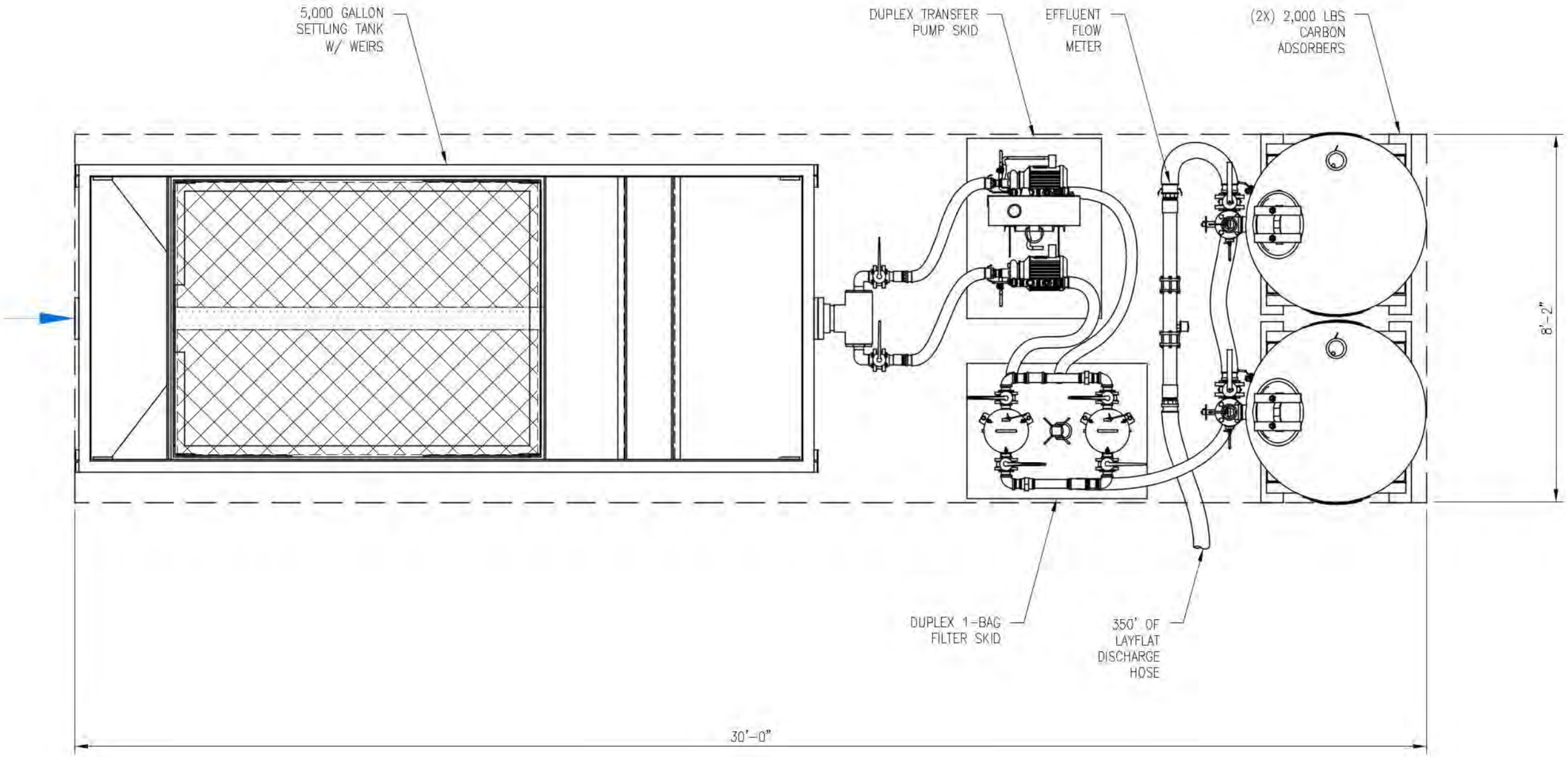


Skanska Civil
Receiving Shaft Work Zone Layout
8/8/19

Figure 3

TEMPORARY TREATMENT SYSTEM

OVERALL PLAN VIEW



NOTES:

1. DESIGN FLOW RATE: 50 GPM
2. SYSTEM FOOTPRINT APPROXIMATELY 8'x30'
3. NOT ALL VALVES, CONNECTIONS, ETC. SHOWN FOR CLARITY
4. GENERATOR BY OTHERS

Figure 4

ID – C:\Cad Files\QUOTES\Q-8000s\Q-8044 Cambridge\Working CAD\QTE-148044-LYT01(A).dwg – Fri, 2 Aug 2019 – 13:18

REV.	DATE	BY	REMARKS	REV.	DATE	BY	REMARKS
A	08/02/19	RS	PRELIMINARY DESIGN FOR REVIEW				

CUSTOMER: SKANSKA

SITE: CAMRIDGE, MA

TITLE: EQUIPMENT LAYOUT 50 GPM TEMPORARY TREATMENT SYSTEM

SCALE: NTS

DRAWN BY: RS DATE: 08/02/19

APPROVED BY: EM DATE: 08/02/19

GWTT
627 MOUNT HOPE ROAD · WHARTON, NJ 07885
PHONE: 973-983-0901 · FAX: 973-983-0903
www.gwttllc.com

DWG SIZE: B | SHEET: 1 OF 1 | DRAWING NO.: QTE-148044-LYT01 | A

Attachment 6

USFW Endangered Species Correspondence

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To: August 15, 2019
Consultation Code: 05E1NE00-2019-SLI-2598
Event Code: 05E1NE00-2019-E-06722
Project Name: City of Cambridge PL6 Stormwater Storage Tank RGP Dewatering Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2019-SLI-2598

Event Code: 05E1NE00-2019-E-06722

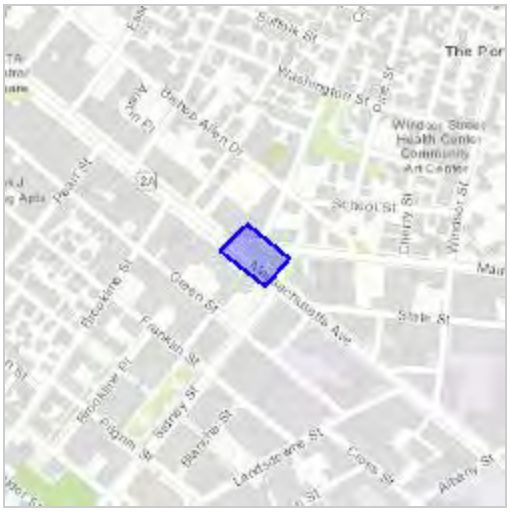
Project Name: City of Cambridge PL6 Stormwater Storage Tank RGP Dewatering Project

Project Type: LAND - DRAINAGE

Project Description: Treatment of groundwater from dewatering proejct and discharge through municipal stormwater system into the Charles River under EPA NPDES Remediation
General Permit.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.363334226885875N71.09996396150879W



Counties: Middlesex, MA

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Critical habitats

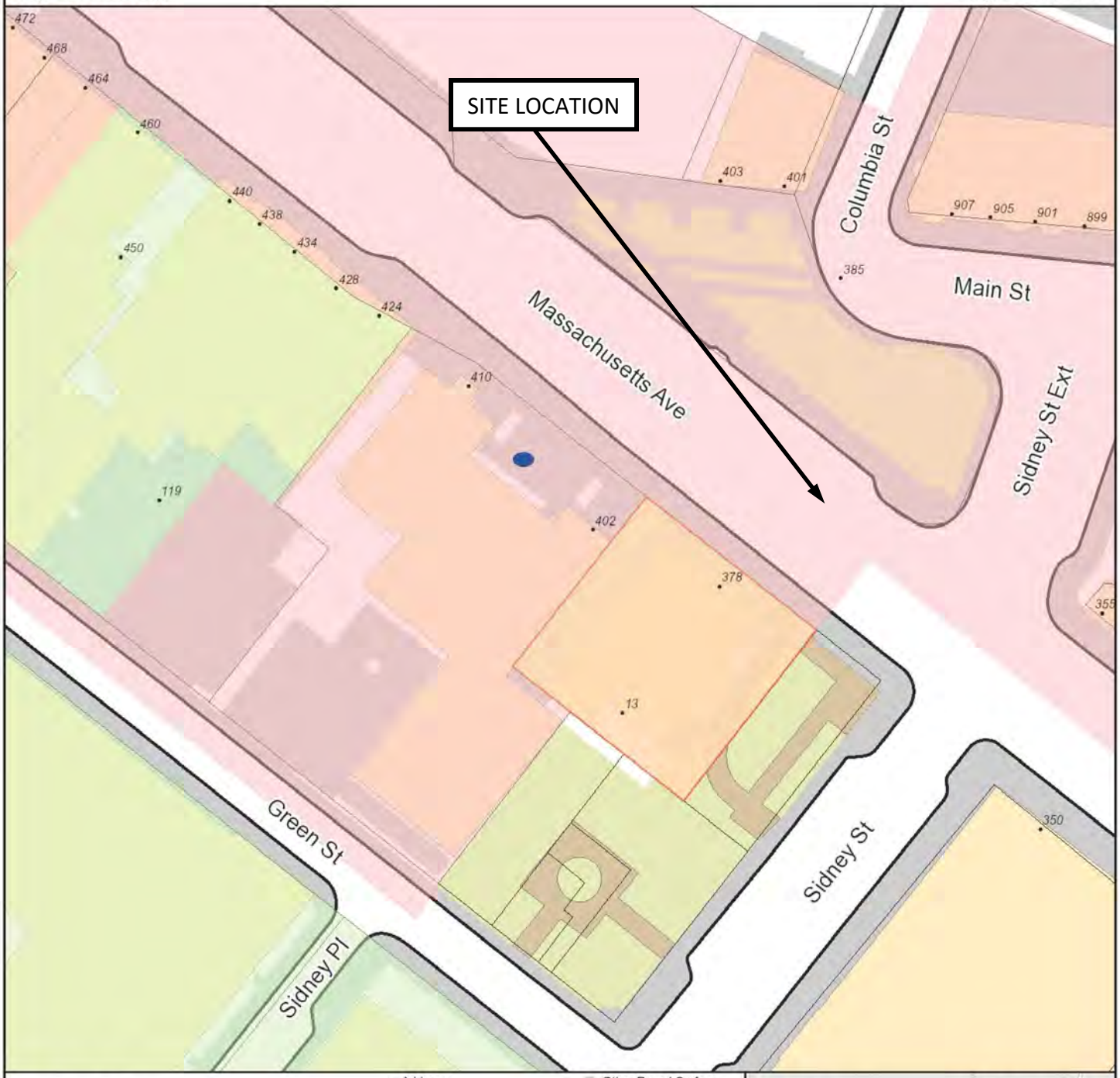
THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Attachment 7

Central Square Historic District Map

City of Cambridge

August 15, 2019



City of Cambridge
Massachusetts

1" = 69 ft

All data is provided for graphic representation only. The City of Cambridge expressly disclaims all warranties of any type, expressed or implied, including, but not limited to, any warranty as to the accuracy of the data, merchantability, or fitness for a particular purpose.

www.cambridgema.gov/gis

- Addresse
- Historical CPA
- Historical Markers

National Register of Historic P
- Individual Building
- District
- Protected Properties
- Conservation Districts
- Historical Districts
- Parcels
- Buildings

Paved Surfaces
- Paved Roads
- Bridges
- Unpaved Roads
- Unpaved Parking
- Sidewalks
- Driveways
- Alleys
- Other Paved Surface
- Public Footpath
- City Boundary

Hydrology
- River
- Pond
- Wetland
- Stream

Attachment 8

Analytical Data

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

August 12, 2019

Andrew Foley
Goldman Environmental
60 Brooks Drive
Braintree, MA 02184

Project Location: RGP
Client Job Number:
Project Number: 1883-8010
Laboratory Work Order Number: 19H0486

Enclosed are results of analyses for samples received by the laboratory on August 8, 2019. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Raymond J. McCarthy
Project Manager

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

Goldman Environmental
60 Brooks Drive
Braintree, MA 02184
ATTN: Andrew Foley

REPORT DATE: 8/12/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 1883-8010

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19H0486

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

PROJECT LOCATION: RGP

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
Mass Ave Trench	19H0486-01	Ground Water		608.3	
				624.1	
				625.1	
				EPA 1664B	
				EPA 200.7	
				EPA 200.8	
				EPA 245.1	
				EPA 300.0	
				EPA 420.1	
				EPA 504.1	
				SM19-22 4500 NH3 C	MA M-MA-086/CT PH-0574/NY11148
				SM21-22 2340C	
				SM21-22 2540D	
				SM21-22 3500 Cr B	
				SM21-22 4500 CL G	
				SM21-22 4500 CN E	MA M-MA-086/CT PH-0574/NY11148
				Tri Chrome Calc.	
Charles River	19H0486-02	Surface Water		608.3	
				624.1	
				625.1	
				EPA 1664B	
				EPA 200.7	
				EPA 200.8	
				EPA 245.1	
				EPA 300.0	
				EPA 420.1	
				EPA 504.1	
				SM19-22 4500 NH3 C	MA M-MA-086/CT PH-0574/NY11148
				SM21-22 2540D	
				SM21-22 3500 Cr B	
				SM21-22 4500 CL G	
				SM21-22 4500 CN E	MA M-MA-086/CT PH-0574/NY11148
				SM2520B	MA M-CT007/CT PH-0618/NY11301
				Tri Chrome Calc.	
Mass Ave Trench TB	19H0486-03	Trip Blank Water		624.1	
Charles River TB	19H0486-04	Trip Blank Water		624.1	

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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.

624.1

Qualifications:

PR-08

pH of sample (pH 5) is outside of method specified preservation criteria.

Analyte & Samples(s) Qualified:

19H0486-03[Mass Ave Trench TB], 19H0486-04[Charles River TB]

625.1

Qualifications:

RL-12

Elevated reporting limit due to matrix interference.

Analyte & Samples(s) Qualified:

19H0486-02[Charles River]

Z-01

Compound calibrated using non-linear calibration

Analyte & Samples(s) Qualified:

Pentachlorophenol (SIM)
19H0486-01[Mass Ave Trench], 19H0486-02[Charles River], B237654-BLK1, B237654-BS1, B237654-BSD1

SM21-22 4500 CL G

Qualifications:

Z-01a

SM 4500 test had calibration points outside of acceptable back-calculated recoveries. Reanalysis yielded similar results.

Analyte & Samples(s) Qualified:

Chlorine, Residual
19H0486-01[Mass Ave Trench], 19H0486-02[Charles River], B237631-BLK1, B237631-BS1, B237631-BSD1

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

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

Project Location: RGP | Sample Description: | Work Order: 19H0486

Date Received: 8/8/2019

Field Sample #: Mass Ave Trench | Sampled: 8/8/2019 13:10

Sample ID: 19H0486-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	<50.0	50.0	0.540	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
tert-Amyl Methyl Ether (TAME)	<0.500	0.500	0.110	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
Benzene	<1.00	1.00	0.180	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
tert-Butyl Alcohol (TBA)	<20.0	20.0	3.50	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
Carbon Tetrachloride	<2.00	2.00	0.110	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
1,2-Dichlorobenzene	<2.00	2.00	0.160	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
1,3-Dichlorobenzene	<2.00	2.00	0.120	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
1,4-Dichlorobenzene	<2.00	2.00	0.130	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
1,2-Dichloroethane	<2.00	2.00	0.410	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
cis-1,2-Dichloroethylene	<1.00	1.00	0.0500	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
1,1-Dichloroethane	<2.00	2.00	0.160	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
1,1-Dichloroethylene	<2.00	2.00	0.320	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
1,4-Dioxane	<50.0	50.0	3.50	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
Ethanol	<50.0	50.0	27.9	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
Ethylbenzene	2.15	2.00	0.130	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
Methyl tert-Butyl Ether (MTBE)	<2.00	2.00	0.250	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
Methylene Chloride	<5.00	5.00	0.340	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
Tetrachloroethylene	<2.00	2.00	0.180	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
Toluene	<1.00	1.00	0.140	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
1,1,1-Trichloroethane	<2.00	2.00	0.200	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
1,1,2-Trichloroethane	<2.00	2.00	0.160	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
Trichloroethylene	<2.00	2.00	0.240	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
Vinyl Chloride	<2.00	2.00	0.450	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
m+p Xylene	2.66	2.00	0.300	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF
o-Xylene	2.05	2.00	0.170	µg/L	1		624.1	8/9/19	8/9/19 8:11	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	103	70-130		8/9/19 8:11
Toluene-d8	100	70-130		8/9/19 8:11
4-Bromofluorobenzene	97.1	70-130		8/9/19 8:11

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Project Location: RGP | Sample Description: | Work Order: 19H0486

Date Received: 8/8/2019

Field Sample #: Mass Ave Trench | Sampled: 8/8/2019 13:10

Sample ID: 19H0486-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene (SIM)	<0.29	0.29	µg/L	1		625.1	8/9/19	8/9/19 15:42	CLA
Acenaphthylene (SIM)	<0.29	0.29	µg/L	1		625.1	8/9/19	8/9/19 15:42	CLA
Anthracene (SIM)	<0.19	0.19	µg/L	1		625.1	8/9/19	8/9/19 15:42	CLA
Benzo(a)anthracene (SIM)	<0.048	0.048	µg/L	1		625.1	8/9/19	8/9/19 15:42	CLA
Benzo(a)pyrene (SIM)	<0.096	0.096	µg/L	1		625.1	8/9/19	8/9/19 15:42	CLA
Benzo(b)fluoranthene (SIM)	<0.048	0.048	µg/L	1		625.1	8/9/19	8/9/19 15:42	CLA
Benzo(g,h,i)perylene (SIM)	<0.48	0.48	µg/L	1		625.1	8/9/19	8/9/19 15:42	CLA
Benzo(k)fluoranthene (SIM)	<0.19	0.19	µg/L	1		625.1	8/9/19	8/9/19 15:42	CLA
Bis(2-ethylhexyl)phthalate (SIM)	<0.96	0.96	µg/L	1		625.1	8/9/19	8/9/19 15:42	CLA
Chrysene (SIM)	<0.19	0.19	µg/L	1		625.1	8/9/19	8/9/19 15:42	CLA
Dibenz(a,h)anthracene (SIM)	<0.19	0.19	µg/L	1		625.1	8/9/19	8/9/19 15:42	CLA
Fluoranthene (SIM)	<0.48	0.48	µg/L	1		625.1	8/9/19	8/9/19 15:42	CLA
Fluorene (SIM)	<0.96	0.96	µg/L	1		625.1	8/9/19	8/9/19 15:42	CLA
Indeno(1,2,3-cd)pyrene (SIM)	<0.19	0.19	µg/L	1		625.1	8/9/19	8/9/19 15:42	CLA
Naphthalene (SIM)	<0.96	0.96	µg/L	1		625.1	8/9/19	8/9/19 15:42	CLA
Pentachlorophenol (SIM)	<0.96	0.96	µg/L	1	Z-01	625.1	8/9/19	8/9/19 15:42	CLA
Phenanthrene (SIM)	<0.048	0.048	µg/L	1		625.1	8/9/19	8/9/19 15:42	CLA
Pyrene (SIM)	<0.96	0.96	µg/L	1		625.1	8/9/19	8/9/19 15:42	CLA

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol (SIM)	40.9	15-110		8/9/19 15:42
Phenol-d6 (SIM)	33.8	15-110		8/9/19 15:42
Nitrobenzene-d5 (SIM)	67.9	30-130		8/9/19 15:42
2-Fluorobiphenyl (SIM)	47.9	30-130		8/9/19 15:42
2,4,6-Tribromophenol (SIM)	73.3	15-110		8/9/19 15:42
p-Terphenyl-d14 (SIM)	55.7	30-130		8/9/19 15:42

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Date Received: 8/8/2019

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Sample ID: 19H0486-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Butylbenzylphthalate	<9.62	9.62	µg/L	1		625.1	8/9/19	8/9/19 14:16	BGL
Di-n-butylphthalate	<9.62	9.62	µg/L	1		625.1	8/9/19	8/9/19 14:16	BGL
Diethylphthalate	<9.62	9.62	µg/L	1		625.1	8/9/19	8/9/19 14:16	BGL
Dimethylphthalate	<9.62	9.62	µg/L	1		625.1	8/9/19	8/9/19 14:16	BGL
Di-n-octylphthalate	<9.62	9.62	µg/L	1		625.1	8/9/19	8/9/19 14:16	BGL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol	37.9	15-110		8/9/19 14:16
Phenol-d6	29.2	15-110		8/9/19 14:16
Nitrobenzene-d5	56.1	30-130		8/9/19 14:16
2-Fluorobiphenyl	54.7	30-130		8/9/19 14:16
2,4,6-Tribromophenol	52.6	15-110		8/9/19 14:16
p-Terphenyl-d14	56.4	30-130		8/9/19 14:16

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Sample ID: 19H0486-01

Sample Matrix: Ground Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	<0.100	0.100	0.0920	µg/L	1		608.3	8/8/19	8/9/19 14:29	TG
Aroclor-1221 [1]	<0.100	0.100	0.0805	µg/L	1		608.3	8/8/19	8/9/19 14:29	TG
Aroclor-1232 [1]	<0.100	0.100	0.0995	µg/L	1		608.3	8/8/19	8/9/19 14:29	TG
Aroclor-1242 [1]	<0.100	0.100	0.0865	µg/L	1		608.3	8/8/19	8/9/19 14:29	TG
Aroclor-1248 [1]	<0.100	0.100	0.0950	µg/L	1		608.3	8/8/19	8/9/19 14:29	TG
Aroclor-1254 [1]	<0.100	0.100	0.0525	µg/L	1		608.3	8/8/19	8/9/19 14:29	TG
Aroclor-1260 [1]	<0.100	0.100	0.0980	µg/L	1		608.3	8/8/19	8/9/19 14:29	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	73.0	30-150		8/9/19 14:29
Decachlorobiphenyl [2]	75.6	30-150		8/9/19 14:29
Tetrachloro-m-xylene [1]	46.2	30-150		8/9/19 14:29
Tetrachloro-m-xylene [2]	41.8	30-150		8/9/19 14:29

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Project Location: RGP | Sample Description: | Work Order: 19H0486

Date Received: 8/8/2019

Field Sample #: Mass Ave Trench | Sampled: 8/8/2019 13:10

Sample ID: 19H0486-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	1.1	1.0		µg/L	1		EPA 200.8	8/9/19	8/9/19 12:38	MJH
Arsenic	1.4	0.80		µg/L	1		EPA 200.8	8/9/19	8/9/19 12:38	MJH
Cadmium	ND	0.20		µg/L	1		EPA 200.8	8/9/19	8/9/19 12:38	MJH
Chromium	1.6	1.0		µg/L	1		EPA 200.8	8/9/19	8/9/19 12:38	MJH
Chromium, Trivalent	0.0016			mg/L	1		Tri Chrome Calc.	8/9/19	8/12/19 7:59	MJH
Copper	4.4	1.0		µg/L	1		EPA 200.8	8/9/19	8/9/19 12:38	MJH
Iron	0.53	0.050		mg/L	1		EPA 200.7	8/9/19	8/9/19 16:09	EJB
Lead	7.7	0.50		µg/L	1		EPA 200.8	8/9/19	8/9/19 12:38	MJH
Mercury	ND	0.00010		mg/L	1		EPA 245.1	8/9/19	8/9/19 12:53	AJL
Nickel	ND	5.0		µg/L	1		EPA 200.8	8/9/19	8/9/19 12:38	MJH
Selenium	ND	5.0	1.6	µg/L	1		EPA 200.8	8/9/19	8/9/19 12:38	MJH
Silver	ND	0.20		µg/L	1		EPA 200.8	8/9/19	8/9/19 12:38	MJH
Zinc	ND	10		µg/L	1		EPA 200.8	8/9/19	8/9/19 12:38	MJH

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Date Received: 8/8/2019

Field Sample #: Mass Ave Trench | Sampled: 8/8/2019 13:10

Sample ID: 19H0486-01

Sample Matrix: Ground Water

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

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	150	10		mg/L	10		EPA 300.0	8/9/19	8/9/19 10:48	IS
Chlorine, Residual	0.048	0.020		mg/L	1	Z-01a	SM21-22 4500 CL G	8/8/19	8/8/19 22:35	MJG
Hardness	80	2.0		mg/L	1		SM21-22 2340C	8/10/19	8/10/19 15:17	KMV
Hexavalent Chromium	ND	0.0040		mg/L	1		SM21-22 3500 Cr B	8/8/19	8/8/19 22:50	MJG
Phenol	0.24	0.050		mg/L	1		EPA 420.1	8/12/19	8/12/19 12:37	MMH
Total Suspended Solids	10	2.0		mg/L	1		SM21-22 2540D	8/10/19	8/10/19 16:25	LL
Silica Gel Treated HEM (SGT-HEM)	ND	1.4		mg/L	1		EPA 1664B	8/12/19	8/12/19 10:30	LL

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Field Sample #: Mass Ave Trench | Sampled: 8/8/2019 13:10

Sample ID: 19H0486-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 504.1

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,2-Dibromoethane (EDB) (1)	ND	0.020	µg/L	1		EPA 504.1	8/9/19	8/9/19 20:17	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,3-Dibromopropane (1)	107	70-130		8/9/19 20:17

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Date Received: 8/8/2019

Field Sample #: Mass Ave Trench | Sampled: 8/8/2019 13:10

Sample ID: 19H0486-01

Sample Matrix: Ground Water

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

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	0.07	0.075	0.024	mg/L	1		SM19-22 4500 NH3 C		8/9/19 22:51	AAL
Cyanide	ND	0.005	0.001	mg/L	1		SM21-22 4500 CN E		8/12/19 10:38	AAL

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Project Location: RGP | Sample Description: | Work Order: 19H0486

Date Received: 8/8/2019

Field Sample #: Charles River | Sampled: 8/8/2019 14:15

Sample ID: 19H0486-02

Sample Matrix: Surface Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	5.06	50.0	0.540	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
tert-Amyl Methyl Ether (TAME)	<0.500	0.500	0.110	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
Benzene	<1.00	1.00	0.180	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
tert-Butyl Alcohol (TBA)	<20.0	20.0	3.50	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
Carbon Tetrachloride	<2.00	2.00	0.110	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
1,2-Dichlorobenzene	<2.00	2.00	0.160	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
1,3-Dichlorobenzene	<2.00	2.00	0.120	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
1,4-Dichlorobenzene	<2.00	2.00	0.130	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
1,2-Dichloroethane	<2.00	2.00	0.410	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
cis-1,2-Dichloroethylene	<1.00	1.00	0.0500	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
1,1-Dichloroethane	<2.00	2.00	0.160	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
1,1-Dichloroethylene	<2.00	2.00	0.320	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
1,4-Dioxane	<50.0	50.0	3.50	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
Ethanol	<50.0	50.0	27.9	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
Ethylbenzene	<2.00	2.00	0.130	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
Methyl tert-Butyl Ether (MTBE)	<2.00	2.00	0.250	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
Methylene Chloride	<5.00	5.00	0.340	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
Tetrachloroethylene	<2.00	2.00	0.180	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
Toluene	<1.00	1.00	0.140	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
1,1,1-Trichloroethane	<2.00	2.00	0.200	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
1,1,2-Trichloroethane	<2.00	2.00	0.160	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
Trichloroethylene	<2.00	2.00	0.240	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
Vinyl Chloride	<2.00	2.00	0.450	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
m+p Xylene	<2.00	2.00	0.300	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF
o-Xylene	<2.00	2.00	0.170	µg/L	1		624.1	8/9/19	8/9/19 8:38	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	105	70-130		8/9/19 8:38
Toluene-d8	97.7	70-130		8/9/19 8:38
4-Bromofluorobenzene	93.7	70-130		8/9/19 8:38

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

Project Location: RGP | Sample Description: | Work Order: 19H0486

Date Received: 8/8/2019

Field Sample #: Charles River | Sampled: 8/8/2019 14:15

Sample ID: 19H0486-02

Sample Matrix: Surface Water

Sample Flags: RL-12

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene (SIM)	<0.58	0.58	µg/L	2		625.1	8/9/19	8/9/19 16:12	CLA
Acenaphthylene (SIM)	<0.58	0.58	µg/L	2		625.1	8/9/19	8/9/19 16:12	CLA
Anthracene (SIM)	<0.38	0.38	µg/L	2		625.1	8/9/19	8/9/19 16:12	CLA
Benzo(a)anthracene (SIM)	<0.096	0.096	µg/L	2		625.1	8/9/19	8/9/19 16:12	CLA
Benzo(a)pyrene (SIM)	<0.19	0.19	µg/L	2		625.1	8/9/19	8/9/19 16:12	CLA
Benzo(b)fluoranthene (SIM)	0.11	0.096	µg/L	2		625.1	8/9/19	8/9/19 16:12	CLA
Benzo(g,h,i)perylene (SIM)	<0.96	0.96	µg/L	2		625.1	8/9/19	8/9/19 16:12	CLA
Benzo(k)fluoranthene (SIM)	<0.38	0.38	µg/L	2		625.1	8/9/19	8/9/19 16:12	CLA
Bis(2-ethylhexyl)phthalate (SIM)	<1.9	1.9	µg/L	2		625.1	8/9/19	8/9/19 16:12	CLA
Chrysene (SIM)	<0.38	0.38	µg/L	2		625.1	8/9/19	8/9/19 16:12	CLA
Dibenz(a,h)anthracene (SIM)	<0.38	0.38	µg/L	2		625.1	8/9/19	8/9/19 16:12	CLA
Fluoranthene (SIM)	<0.96	0.96	µg/L	2		625.1	8/9/19	8/9/19 16:12	CLA
Fluorene (SIM)	<1.9	1.9	µg/L	2		625.1	8/9/19	8/9/19 16:12	CLA
Indeno(1,2,3-cd)pyrene (SIM)	<0.38	0.38	µg/L	2		625.1	8/9/19	8/9/19 16:12	CLA
Naphthalene (SIM)	<1.9	1.9	µg/L	2		625.1	8/9/19	8/9/19 16:12	CLA
Pentachlorophenol (SIM)	<1.9	1.9	µg/L	2	Z-01	625.1	8/9/19	8/9/19 16:12	CLA
Phenanthrene (SIM)	<0.096	0.096	µg/L	2		625.1	8/9/19	8/9/19 16:12	CLA
Pyrene (SIM)	<1.9	1.9	µg/L	2		625.1	8/9/19	8/9/19 16:12	CLA

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol (SIM)	32.5	15-110		8/9/19 16:12
Phenol-d6 (SIM)	26.4	15-110		8/9/19 16:12
Nitrobenzene-d5 (SIM)	51.0	30-130		8/9/19 16:12
2-Fluorobiphenyl (SIM)	40.2	30-130		8/9/19 16:12
2,4,6-Tribromophenol (SIM)	63.3	15-110		8/9/19 16:12
p-Terphenyl-d14 (SIM)	47.4	30-130		8/9/19 16:12

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Project Location: RGP | Sample Description: | Work Order: 19H0486

Date Received: 8/8/2019

Field Sample #: Charles River | Sampled: 8/8/2019 14:15

Sample ID: 19H0486-02

Sample Matrix: Surface Water

Semivolatile Organic Compounds by - GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Butylbenzylphthalate	<9.62	9.62	µg/L	1		625.1	8/9/19	8/9/19 14:43	BGL
Di-n-butylphthalate	<9.62	9.62	µg/L	1		625.1	8/9/19	8/9/19 14:43	BGL
Diethylphthalate	<9.62	9.62	µg/L	1		625.1	8/9/19	8/9/19 14:43	BGL
Dimethylphthalate	<9.62	9.62	µg/L	1		625.1	8/9/19	8/9/19 14:43	BGL
Di-n-octylphthalate	<9.62	9.62	µg/L	1		625.1	8/9/19	8/9/19 14:43	BGL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol	32.8	15-110		8/9/19 14:43
Phenol-d6	24.0	15-110		8/9/19 14:43
Nitrobenzene-d5	46.5	30-130		8/9/19 14:43
2-Fluorobiphenyl	46.4	30-130		8/9/19 14:43
2,4,6-Tribromophenol	46.3	15-110		8/9/19 14:43
p-Terphenyl-d14	48.9	30-130		8/9/19 14:43

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Project Location: RGP | Sample Description: | Work Order: 19H0486

Date Received: 8/8/2019

Field Sample #: Charles River | Sampled: 8/8/2019 14:15

Sample ID: 19H0486-02

Sample Matrix: Surface Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	<0.100	0.100	0.0920	µg/L	1		608.3	8/8/19	8/9/19 14:42	TG
Aroclor-1221 [1]	<0.100	0.100	0.0805	µg/L	1		608.3	8/8/19	8/9/19 14:42	TG
Aroclor-1232 [1]	<0.100	0.100	0.0995	µg/L	1		608.3	8/8/19	8/9/19 14:42	TG
Aroclor-1242 [1]	<0.100	0.100	0.0865	µg/L	1		608.3	8/8/19	8/9/19 14:42	TG
Aroclor-1248 [1]	<0.100	0.100	0.0950	µg/L	1		608.3	8/8/19	8/9/19 14:42	TG
Aroclor-1254 [1]	<0.100	0.100	0.0525	µg/L	1		608.3	8/8/19	8/9/19 14:42	TG
Aroclor-1260 [1]	<0.100	0.100	0.0980	µg/L	1		608.3	8/8/19	8/9/19 14:42	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	100	30-150		8/9/19 14:42
Decachlorobiphenyl [2]	98.1	30-150		8/9/19 14:42
Tetrachloro-m-xylene [1]	93.5	30-150		8/9/19 14:42
Tetrachloro-m-xylene [2]	79.7	30-150		8/9/19 14:42

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Project Location: RGP | Sample Description: | Work Order: 19H0486

Date Received: 8/8/2019

Field Sample #: Charles River | Sampled: 8/8/2019 14:15

Sample ID: 19H0486-02

Sample Matrix: Surface Water

Metals Analyses (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0		µg/L	1		EPA 200.8	8/9/19	8/9/19 12:41	MJH
Arsenic	ND	0.80		µg/L	1		EPA 200.8	8/9/19	8/9/19 12:41	MJH
Cadmium	ND	0.20		µg/L	1		EPA 200.8	8/9/19	8/9/19 12:41	MJH
Chromium	2.0	1.0		µg/L	1		EPA 200.8	8/9/19	8/9/19 12:41	MJH
Chromium, Trivalent	0.0020			mg/L	1		Tri Chrome Calc.	8/9/19	8/12/19 7:59	MJH
Copper	5.6	1.0		µg/L	1		EPA 200.8	8/9/19	8/9/19 12:41	MJH
Iron	1.2	0.050		mg/L	1		EPA 200.7	8/9/19	8/9/19 16:30	EJB
Lead	8.7	0.50		µg/L	1		EPA 200.8	8/9/19	8/9/19 12:41	MJH
Mercury	ND	0.00010		mg/L	1		EPA 245.1	8/9/19	8/9/19 12:55	AJL
Nickel	ND	5.0		µg/L	1		EPA 200.8	8/9/19	8/9/19 12:41	MJH
Selenium	ND	5.0	1.6	µg/L	1		EPA 200.8	8/9/19	8/9/19 12:41	MJH
Silver	ND	0.20		µg/L	1		EPA 200.8	8/9/19	8/9/19 12:41	MJH
Zinc	13	10		µg/L	1		EPA 200.8	8/9/19	8/9/19 12:41	MJH
Hardness	55			mg/L	1		EPA 200.7	8/9/19	8/9/19 16:30	EJB

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Project Location: RGP | Sample Description: | Work Order: 19H0486

Date Received: 8/8/2019

Field Sample #: Charles River | Sampled: 8/8/2019 14:15

Sample ID: 19H0486-02

Sample Matrix: Surface Water

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

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	120	10		mg/L	10		EPA 300.0	8/9/19	8/9/19 12:01	IS
Chlorine, Residual	0.23	0.020		mg/L	1	Z-01a	SM21-22 4500 CL G	8/8/19	8/8/19 22:35	MJG
Hexavalent Chromium	ND	0.0040		mg/L	1		SM21-22 3500 Cr B	8/8/19	8/8/19 22:50	MJG
Phenol	0.29	0.050		mg/L	1		EPA 420.1	8/12/19	8/12/19 12:37	MMH
Total Suspended Solids	32	2.0		mg/L	1		SM21-22 2540D	8/10/19	8/10/19 16:25	LL
Silica Gel Treated HEM (SGT-HEM)	ND	1.4		mg/L	1		EPA 1664B	8/12/19	8/12/19 10:30	LL

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Project Location: RGP | Sample Description: | Work Order: 19H0486

Date Received: 8/8/2019

Field Sample #: Charles River | Sampled: 8/8/2019 14:15

Sample ID: 19H0486-02

Sample Matrix: Surface Water

Drinking Water Organics EPA 504.1

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,2-Dibromoethane (EDB) (1)	ND	0.019	µg/L	1		EPA 504.1	8/9/19	8/9/19 20:49	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual				
1,3-Dibromopropane (1)	101	70-130					8/9/19 20:49

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Project Location: RGP | Sample Description: | Work Order: 19H0486

Date Received: 8/8/2019

Field Sample #: Charles River | Sampled: 8/8/2019 14:15

Sample ID: 19H0486-02

Sample Matrix: Surface Water

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

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	0.056	0.075	0.024	mg/L	1		SM19-22 4500 NH3 C		8/9/19 21:00	AAL
Cyanide	ND	0.005	0.001	mg/L	1		SM21-22 4500 CN E		8/11/19 16:10	AAL

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Project Location: RGP | Sample Description: | Work Order: 19H0486

Date Received: 8/8/2019

Field Sample #: Charles River | Sampled: 8/8/2019 14:15

Sample ID: 19H0486-02

Sample Matrix: Surface Water

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

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Salinity	ND	0.5		ppt	1		SM2520B		8/9/19 0:00	PEL

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Project Location: RGP | Sample Description: | Work Order: 19H0486

Date Received: 8/8/2019

Field Sample #: Mass Ave Trench TB | Sampled: 8/8/2019 13:10

Sample ID: 19H0486-03

Sample Matrix: Trip Blank Water

Sample Flags: PR-08

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	<50.0	50.0	0.540	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
tert-Amyl Methyl Ether (TAME)	<0.500	0.500	0.110	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
Benzene	<1.00	1.00	0.180	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
tert-Butyl Alcohol (TBA)	<20.0	20.0	3.50	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
Carbon Tetrachloride	<2.00	2.00	0.110	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
1,2-Dichlorobenzene	<2.00	2.00	0.160	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
1,3-Dichlorobenzene	<2.00	2.00	0.120	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
1,4-Dichlorobenzene	<2.00	2.00	0.130	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
1,2-Dichloroethane	<2.00	2.00	0.410	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
cis-1,2-Dichloroethylene	<1.00	1.00	0.0500	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
1,1-Dichloroethane	<2.00	2.00	0.160	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
1,1-Dichloroethylene	<2.00	2.00	0.320	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
1,4-Dioxane	<50.0	50.0	3.50	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
Ethanol	<50.0	50.0	27.9	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
Ethylbenzene	<2.00	2.00	0.130	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
Methyl tert-Butyl Ether (MTBE)	<2.00	2.00	0.250	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
Methylene Chloride	<5.00	5.00	0.340	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
Tetrachloroethylene	<2.00	2.00	0.180	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
Toluene	<1.00	1.00	0.140	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
1,1,1-Trichloroethane	<2.00	2.00	0.200	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
1,1,2-Trichloroethane	<2.00	2.00	0.160	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
Trichloroethylene	<2.00	2.00	0.240	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
Vinyl Chloride	<2.00	2.00	0.450	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
m+p Xylene	<2.00	2.00	0.300	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF
o-Xylene	<2.00	2.00	0.170	µg/L	1		624.1	8/9/19	8/9/19 9:04	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	105	70-130		8/9/19 9:04
Toluene-d8	98.8	70-130		8/9/19 9:04
4-Bromofluorobenzene	95.9	70-130		8/9/19 9:04

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Project Location: RGP | Sample Description: | Work Order: 19H0486

Date Received: 8/8/2019

Field Sample #: Charles River TB | Sampled: 8/8/2019 14:15

Sample ID: 19H0486-04

Sample Matrix: Trip Blank Water

Sample Flags: PR-08

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	4.29	50.0	0.540	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
tert-Amyl Methyl Ether (TAME)	<0.500	0.500	0.110	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
Benzene	<1.00	1.00	0.180	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
tert-Butyl Alcohol (TBA)	<20.0	20.0	3.50	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
Carbon Tetrachloride	<2.00	2.00	0.110	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
1,2-Dichlorobenzene	<2.00	2.00	0.160	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
1,3-Dichlorobenzene	<2.00	2.00	0.120	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
1,4-Dichlorobenzene	<2.00	2.00	0.130	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
1,2-Dichloroethane	<2.00	2.00	0.410	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
cis-1,2-Dichloroethylene	<1.00	1.00	0.0500	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
1,1-Dichloroethane	<2.00	2.00	0.160	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
1,1-Dichloroethylene	<2.00	2.00	0.320	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
1,4-Dioxane	<50.0	50.0	3.50	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
Ethanol	<50.0	50.0	27.9	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
Ethylbenzene	<2.00	2.00	0.130	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
Methyl tert-Butyl Ether (MTBE)	<2.00	2.00	0.250	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
Methylene Chloride	<5.00	5.00	0.340	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
Tetrachloroethylene	<2.00	2.00	0.180	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
Toluene	<1.00	1.00	0.140	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
1,1,1-Trichloroethane	<2.00	2.00	0.200	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
1,1,2-Trichloroethane	<2.00	2.00	0.160	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
Trichloroethylene	<2.00	2.00	0.240	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
Vinyl Chloride	<2.00	2.00	0.450	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
m+p Xylene	<2.00	2.00	0.300	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF
o-Xylene	<2.00	2.00	0.170	µg/L	1		624.1	8/9/19	8/9/19 9:31	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	105	70-130		8/9/19 9:31
Toluene-d8	97.4	70-130		8/9/19 9:31
4-Bromofluorobenzene	94.2	70-130		8/9/19 9:31

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Sample Extraction Data

Prep Method: SW-846 3510C-608.3

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H0486-01 [Mass Ave Trench]	B237498	1000	5.00	08/08/19
19H0486-02 [Charles River]	B237498	1000	5.00	08/08/19

Prep Method: SW-846 5030B-624.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H0486-01 [Mass Ave Trench]	B237607	5	5.00	08/09/19
19H0486-02 [Charles River]	B237607	5	5.00	08/09/19
19H0486-03 [Mass Ave Trench TB]	B237607	5	5.00	08/09/19
19H0486-04 [Charles River TB]	B237607	5	5.00	08/09/19

Prep Method: SW-846 3510C-625.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H0486-01 [Mass Ave Trench]	B237602	1040	1.00	08/09/19
19H0486-02 [Charles River]	B237602	1040	1.00	08/09/19

Prep Method: SW-846 3510C-625.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H0486-01 [Mass Ave Trench]	B237654	1040	1.00	08/09/19
19H0486-02 [Charles River]	B237654	1040	1.00	08/09/19

EPA 1664B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H0486-01 [Mass Ave Trench]	B237765	1000		08/12/19
19H0486-02 [Charles River]	B237765	1000		08/12/19

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H0486-01 [Mass Ave Trench]	B237611	25.0	25.0	08/09/19
19H0486-02 [Charles River]	B237611	25.0	25.0	08/09/19
19H0486-02 [Charles River]	B237611	25.0		08/09/19

Prep Method: EPA 200.8-EPA 200.8

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H0486-01 [Mass Ave Trench]	B237612	25.0	25.0	08/09/19
19H0486-02 [Charles River]	B237612	25.0	25.0	08/09/19

Prep Method: EPA 245.1-EPA 245.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H0486-01 [Mass Ave Trench]	B237636	6.00	6.00	08/09/19

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Sample Extraction Data

Prep Method: EPA 245.1-EPA 245.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H0486-02 [Charles River]	B237636	6.00	6.00	08/09/19

EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H0486-01 [Mass Ave Trench]	B237609	10.0	10.0	08/09/19
19H0486-02 [Charles River]	B237609	10.0	10.0	08/09/19

EPA 420.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H0486-01 [Mass Ave Trench]	B237754	50.0	50.0	08/12/19
19H0486-02 [Charles River]	B237754	50.0	50.0	08/12/19

Prep Method: EPA 504 water-EPA 504.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H0486-01 [Mass Ave Trench]	B237628	35.0	35.0	08/09/19
19H0486-02 [Charles River]	B237628	36.4	35.0	08/09/19

SM21-22 2340C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H0486-01 [Mass Ave Trench]	B237721	50.0	50.0	08/10/19

SM21-22 2540D

Lab Number [Field ID]	Batch	Initial [mL]	Date
19H0486-01 [Mass Ave Trench]	B237729	250	08/10/19
19H0486-02 [Charles River]	B237729	250	08/10/19

SM21-22 3500 Cr B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H0486-01 [Mass Ave Trench]	B237632	50.0	50.0	08/08/19
19H0486-02 [Charles River]	B237632	50.0	50.0	08/08/19

SM21-22 4500 CL G

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H0486-01 [Mass Ave Trench]	B237631	100	100	08/08/19
19H0486-02 [Charles River]	B237631	100	100	08/08/19

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Sample Extraction Data

Prep Method: EPA 200.8-Tri Chrome Calc.

Lab Number [Field ID]	Batch	Initial [mL]	Date
19H0486-01 [Mass Ave Trench]	B237612	25.0	08/09/19
19H0486-02 [Charles River]	B237612	25.0	08/09/19

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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 B237607 - SW-846 5030B										
Blank (B237607-BLK1)				Prepared & Analyzed: 08/09/19						
Acetone	ND	50.0	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.500	µg/L							
Benzene	ND	1.00	µg/L							
tert-Butyl Alcohol (TBA)	ND	20.0	µg/L							
Carbon Tetrachloride	ND	2.00	µg/L							
1,2-Dichlorobenzene	ND	2.00	µg/L							
1,3-Dichlorobenzene	ND	2.00	µg/L							
1,4-Dichlorobenzene	ND	2.00	µg/L							
1,2-Dichloroethane	ND	2.00	µg/L							
cis-1,2-Dichloroethylene	ND	1.00	µg/L							
1,1-Dichloroethane	ND	2.00	µg/L							
1,1-Dichloroethylene	ND	2.00	µg/L							
1,4-Dioxane	ND	50.0	µg/L							
Ethylbenzene	ND	2.00	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	2.00	µg/L							
Methylene Chloride	ND	5.00	µg/L							
Tetrachloroethylene	ND	2.00	µg/L							
Toluene	ND	1.00	µg/L							
1,1,1-Trichloroethane	ND	2.00	µg/L							
1,1,2-Trichloroethane	ND	2.00	µg/L							
Trichloroethylene	ND	2.00	µg/L							
Vinyl Chloride	ND	2.00	µg/L							
m+p Xylene	ND	2.00	µg/L							
o-Xylene	ND	2.00	µg/L							
Surrogate: 1,2-Dichloroethane-d4	*26.1*		µg/L	25.0		104	70-130			
Surrogate: Toluene-d8	*24.6*		µg/L	25.0		98.5	70-130			
Surrogate: 4-Bromofluorobenzene	*24.0*		µg/L	25.0		95.9	70-130			
LCS (B237607-BS1)				Prepared & Analyzed: 08/09/19						
Acetone	220	50.0	µg/L	200		108	70-160			†
tert-Amyl Methyl Ether (TAME)	21	0.500	µg/L	20.0		103	70-130			
Benzene	22	1.00	µg/L	20.0		109	65-135			
tert-Butyl Alcohol (TBA)	190	20.0	µg/L	200		95.7	40-160			†
Carbon Tetrachloride	20	2.00	µg/L	20.0		101	70-130			
1,2-Dichlorobenzene	21	2.00	µg/L	20.0		107	65-135			
1,3-Dichlorobenzene	22	2.00	µg/L	20.0		108	70-130			
1,4-Dichlorobenzene	21	2.00	µg/L	20.0		105	65-135			
1,2-Dichloroethane	22	2.00	µg/L	20.0		108	70-130			
cis-1,2-Dichloroethylene	22	1.00	µg/L	20.0		112	70-130			
1,1-Dichloroethane	21	2.00	µg/L	20.0		107	70-130			
1,1-Dichloroethylene	22	2.00	µg/L	20.0		111	50-150			
1,4-Dioxane	210	50.0	µg/L	200		106	40-130			†
Ethylbenzene	21	2.00	µg/L	20.0		106	60-140			
Methyl tert-Butyl Ether (MTBE)	21	2.00	µg/L	20.0		107	70-130			
Methylene Chloride	22	5.00	µg/L	20.0		111	60-140			
Tetrachloroethylene	22	2.00	µg/L	20.0		109	70-130			
Toluene	22	1.00	µg/L	20.0		108	70-130			
1,1,1-Trichloroethane	21	2.00	µg/L	20.0		106	70-130			
1,1,2-Trichloroethane	23	2.00	µg/L	20.0		113	70-130			
Trichloroethylene	22	2.00	µg/L	20.0		111	65-135			
Vinyl Chloride	19	2.00	µg/L	20.0		95.2	5-195			
m+p Xylene	43	2.00	µg/L	40.0		108	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 B237607 - SW-846 5030B										
LCS (B237607-BS1)				Prepared & Analyzed: 08/09/19						
o-Xylene	22	2.00	µg/L	20.0		109	70-130			
Surrogate: 1,2-Dichloroethane-d4	*25.6*		µg/L	25.0		102	70-130			
Surrogate: Toluene-d8	*25.0*		µg/L	25.0		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	*24.7*		µg/L	25.0		98.7	70-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B237654 - SW-846 3510C										
Blank (B237654-BLK1)				Prepared & Analyzed: 08/09/19						
Acenaphthene (SIM)	ND	0.30	µg/L							
Acenaphthylene (SIM)	ND	0.30	µg/L							
Anthracene (SIM)	ND	0.20	µg/L							
Benzo(a)anthracene (SIM)	ND	0.050	µg/L							
Benzo(a)pyrene (SIM)	ND	0.10	µg/L							
Benzo(b)fluoranthene (SIM)	ND	0.050	µg/L							
Benzo(g,h,i)perylene (SIM)	ND	0.50	µg/L							
Benzo(k)fluoranthene (SIM)	ND	0.20	µg/L							
Bis(2-ethylhexyl)phthalate (SIM)	ND	1.0	µg/L							
Chrysene (SIM)	ND	0.20	µg/L							
Dibenz(a,h)anthracene (SIM)	ND	0.20	µg/L							
Fluoranthene (SIM)	ND	0.50	µg/L							
Fluorene (SIM)	ND	1.0	µg/L							
Indeno(1,2,3-cd)pyrene (SIM)	ND	0.20	µg/L							
Naphthalene (SIM)	ND	1.0	µg/L							
Pentachlorophenol (SIM)	ND	1.0	µg/L							Z-01
Phenanthrene (SIM)	ND	0.050	µg/L							
Pyrene (SIM)	ND	1.0	µg/L							
Surrogate: 2-Fluorophenol (SIM)	*84.1*		µg/L	200		42.0	15-110			
Surrogate: Phenol-d6 (SIM)	*63.7*		µg/L	200		31.8	15-110			
Surrogate: Nitrobenzene-d5 (SIM)	*72.6*		µg/L	100		72.6	30-130			
Surrogate: 2-Fluorobiphenyl (SIM)	*49.5*		µg/L	100		49.5	30-130			
Surrogate: 2,4,6-Tribromophenol (SIM)	*149*		µg/L	200		74.7	15-110			
Surrogate: p-Terphenyl-d14 (SIM)	*58.7*		µg/L	100		58.7	30-130			
LCS (B237654-BS1)				Prepared & Analyzed: 08/09/19						
Acenaphthene (SIM)	36.4	6.0	µg/L	50.0		72.8	47-145			
Acenaphthylene (SIM)	37.2	6.0	µg/L	50.0		74.4	33-145			
Anthracene (SIM)	40.8	4.0	µg/L	50.0		81.6	27-133			
Benzo(a)anthracene (SIM)	39.0	1.0	µg/L	50.0		78.1	33-143			
Benzo(a)pyrene (SIM)	43.0	2.0	µg/L	50.0		86.0	17-163			
Benzo(b)fluoranthene (SIM)	42.5	1.0	µg/L	50.0		84.9	24-159			
Benzo(g,h,i)perylene (SIM)	40.3	10	µg/L	50.0		80.6	10-219			
Benzo(k)fluoranthene (SIM)	41.4	4.0	µg/L	50.0		82.8	11-162			
Bis(2-ethylhexyl)phthalate (SIM)	45.0	20	µg/L	50.0		90.0	8-158			
Chrysene (SIM)	39.2	4.0	µg/L	50.0		78.4	17-168			
Dibenz(a,h)anthracene (SIM)	41.6	4.0	µg/L	50.0		83.2	10-227			
Fluoranthene (SIM)	40.6	10	µg/L	50.0		81.2	26-137			
Fluorene (SIM)	39.1	20	µg/L	50.0		78.1	59-121			
Indeno(1,2,3-cd)pyrene (SIM)	42.6	4.0	µg/L	50.0		85.2	10-171			
Naphthalene (SIM)	32.8	20	µg/L	50.0		65.6	21-133			
Pentachlorophenol (SIM)	44.3	20	µg/L	50.0		88.6	14-176			Z-01
Phenanthrene (SIM)	39.0	1.0	µg/L	50.0		77.9	54-120			
Pyrene (SIM)	39.2	20	µg/L	50.0		78.4	52-120			
Surrogate: 2-Fluorophenol (SIM)	*85.2*		µg/L	200		42.6	15-110			
Surrogate: Phenol-d6 (SIM)	*65.8*		µg/L	200		32.9	15-110			
Surrogate: Nitrobenzene-d5 (SIM)	*75.0*		µg/L	100		75.0	30-130			
Surrogate: 2-Fluorobiphenyl (SIM)	*60.5*		µg/L	100		60.5	30-130			
Surrogate: 2,4,6-Tribromophenol (SIM)	*158*		µg/L	200		78.8	15-110			
Surrogate: p-Terphenyl-d14 (SIM)	*74.3*		µg/L	100		74.3	30-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B237654 - SW-846 3510C											
LCS Dup (B237654-BSD1)				Prepared & Analyzed: 08/09/19							
Acenaphthene (SIM)	33.1	6.0	µg/L	50.0		66.2	47-145	9.55	48		
Acenaphthylene (SIM)	33.9	6.0	µg/L	50.0		67.8	33-145	9.34	74		
Anthracene (SIM)	36.5	4.0	µg/L	50.0		73.0	27-133	11.2	66		
Benzo(a)anthracene (SIM)	35.4	1.0	µg/L	50.0		70.8	33-143	9.78	53		
Benzo(a)pyrene (SIM)	39.0	2.0	µg/L	50.0		78.0	17-163	9.75	72		
Benzo(b)fluoranthene (SIM)	38.6	1.0	µg/L	50.0		77.1	24-159	9.63	71		
Benzo(g,h,i)perylene (SIM)	36.4	10	µg/L	50.0		72.8	10-219	10.1	97		
Benzo(k)fluoranthene (SIM)	37.8	4.0	µg/L	50.0		75.7	11-162	9.03	63		
Bis(2-ethylhexyl)phthalate (SIM)	40.5	20	µg/L	50.0		80.9	8-158	10.7	82		
Chrysene (SIM)	35.7	4.0	µg/L	50.0		71.5	17-168	9.23	87		
Dibenz(a,h)anthracene (SIM)	38.0	4.0	µg/L	50.0		76.0	10-227	9.15	126		
Fluoranthene (SIM)	36.4	10	µg/L	50.0		72.8	26-137	10.9	66		
Fluorene (SIM)	35.2	20	µg/L	50.0		70.5	59-121	10.3	38		
Indeno(1,2,3-cd)pyrene (SIM)	38.5	4.0	µg/L	50.0		76.9	10-171	10.2	99		‡
Naphthalene (SIM)	30.5	20	µg/L	50.0		61.1	21-133	7.08	65		
Pentachlorophenol (SIM)	39.7	20	µg/L	50.0		79.4	14-176	11.0	86	Z-01	
Phenanthrene (SIM)	34.9	1.0	µg/L	50.0		69.8	54-120	11.1	39		
Pyrene (SIM)	35.4	20	µg/L	50.0		70.7	52-120	10.2	49		
Surrogate: 2-Fluorophenol (SIM)	*72.3*		µg/L	200		36.2	15-110				
Surrogate: Phenol-d6 (SIM)	*57.8*		µg/L	200		28.9	15-110				
Surrogate: Nitrobenzene-d5 (SIM)	*69.0*		µg/L	100		69.0	30-130				
Surrogate: 2-Fluorobiphenyl (SIM)	*56.3*		µg/L	100		56.3	30-130				
Surrogate: 2,4,6-Tribromophenol (SIM)	*144*		µg/L	200		71.8	15-110				
Surrogate: p-Terphenyl-d14 (SIM)	*67.0*		µg/L	100		67.0	30-130				

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B237602 - SW-846 3510C										
Blank (B237602-BLK1)				Prepared & Analyzed: 08/09/19						
Butylbenzylphthalate	ND	10.0	µg/L							
Di-n-butylphthalate	ND	10.0	µg/L							
Diethylphthalate	ND	10.0	µg/L							
Dimethylphthalate	ND	10.0	µg/L							
Di-n-octylphthalate	ND	10.0	µg/L							
Surrogate: 2-Fluorophenol	*79.6*		µg/L	200		39.8	15-110			
Surrogate: Phenol-d6	*54.5*		µg/L	200		27.3	15-110			
Surrogate: Nitrobenzene-d5	*60.1*		µg/L	100		60.1	30-130			
Surrogate: 2-Fluorobiphenyl	*59.5*		µg/L	100		59.5	30-130			
Surrogate: 2,4,6-Tribromophenol	*110*		µg/L	200		54.9	15-110			
Surrogate: p-Terphenyl-d14	*62.9*		µg/L	100		62.9	30-130			
LCS (B237602-BS1)				Prepared & Analyzed: 08/09/19						
Butylbenzylphthalate	29.6	10.0	µg/L	50.0		59.3	10-152			
Di-n-butylphthalate	29.4	10.0	µg/L	50.0		58.8	10-120			
Diethylphthalate	29.3	10.0	µg/L	50.0		58.6	10-120			
Dimethylphthalate	32.1	10.0	µg/L	50.0		64.1	10-120			
Di-n-octylphthalate	26.8	10.0	µg/L	50.0		53.6	4-146			
Surrogate: 2-Fluorophenol	*86.4*		µg/L	200		43.2	15-110			
Surrogate: Phenol-d6	*63.0*		µg/L	200		31.5	15-110			
Surrogate: Nitrobenzene-d5	*70.8*		µg/L	100		70.8	30-130			
Surrogate: 2-Fluorobiphenyl	*68.9*		µg/L	100		68.9	30-130			
Surrogate: 2,4,6-Tribromophenol	*130*		µg/L	200		65.2	15-110			
Surrogate: p-Terphenyl-d14	*67.3*		µg/L	100		67.3	30-130			
LCS Dup (B237602-BSD1)				Prepared & Analyzed: 08/09/19						
Butylbenzylphthalate	30.4	10.0	µg/L	50.0		60.9	10-152	2.66	60	
Di-n-butylphthalate	30.0	10.0	µg/L	50.0		59.9	10-120	1.82	47	
Diethylphthalate	30.8	10.0	µg/L	50.0		61.7	10-120	5.16	100	
Dimethylphthalate	36.0	10.0	µg/L	50.0		72.1	10-120	11.7	183	
Di-n-octylphthalate	27.0	10.0	µg/L	50.0		54.0	4-146	0.669	69	
Surrogate: 2-Fluorophenol	*87.6*		µg/L	200		43.8	15-110			
Surrogate: Phenol-d6	*65.7*		µg/L	200		32.8	15-110			
Surrogate: Nitrobenzene-d5	*69.3*		µg/L	100		69.3	30-130			
Surrogate: 2-Fluorobiphenyl	*84.1*		µg/L	100		84.1	30-130			
Surrogate: 2,4,6-Tribromophenol	*138*		µg/L	200		69.0	15-110			
Surrogate: p-Terphenyl-d14	*68.8*		µg/L	100		68.8	30-130			

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QUALITY CONTROL

Polychlorinated Biphenyls By GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B237498 - SW-846 3510C										
Blank (B237498-BLK1)				Prepared & Analyzed: 08/08/19						
Aroclor-1016	ND	0.100	µg/L							
Aroclor-1016 [2C]	ND	0.100	µg/L							
Aroclor-1221	ND	0.100	µg/L							
Aroclor-1221 [2C]	ND	0.100	µg/L							
Aroclor-1232	ND	0.100	µg/L							
Aroclor-1232 [2C]	ND	0.100	µg/L							
Aroclor-1242	ND	0.100	µg/L							
Aroclor-1242 [2C]	ND	0.100	µg/L							
Aroclor-1248	ND	0.100	µg/L							
Aroclor-1248 [2C]	ND	0.100	µg/L							
Aroclor-1254	ND	0.100	µg/L							
Aroclor-1254 [2C]	ND	0.100	µg/L							
Aroclor-1260	ND	0.100	µg/L							
Aroclor-1260 [2C]	ND	0.100	µg/L							
Surrogate: Decachlorobiphenyl	*0.838*		µg/L	1.00		83.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.786*		µg/L	1.00		78.6	30-150			
Surrogate: Tetrachloro-m-xylene	*0.909*		µg/L	1.00		90.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.843*		µg/L	1.00		84.3	30-150			
LCS (B237498-BS1)				Prepared & Analyzed: 08/08/19						
Aroclor-1016	0.496	0.200	µg/L	0.500		99.2	50-140			
Aroclor-1016 [2C]	0.468	0.200	µg/L	0.500		93.6	50-140			
Aroclor-1260	0.494	0.200	µg/L	0.500		98.7	8-140			
Aroclor-1260 [2C]	0.461	0.200	µg/L	0.500		92.2	8-140			
Surrogate: Decachlorobiphenyl	*1.96*		µg/L	2.00		98.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.84*		µg/L	2.00		92.1	30-150			
Surrogate: Tetrachloro-m-xylene	*1.78*		µg/L	2.00		89.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.66*		µg/L	2.00		82.9	30-150			
LCS Dup (B237498-BSD1)				Prepared & Analyzed: 08/08/19						
Aroclor-1016	0.521	0.200	µg/L	0.500		104	50-140	4.85		
Aroclor-1016 [2C]	0.468	0.200	µg/L	0.500		93.7	50-140	0.0534		
Aroclor-1260	0.497	0.200	µg/L	0.500		99.5	8-140	0.785		
Aroclor-1260 [2C]	0.464	0.200	µg/L	0.500		92.8	8-140	0.744		
Surrogate: Decachlorobiphenyl	*1.96*		µg/L	2.00		98.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.84*		µg/L	2.00		92.1	30-150			
Surrogate: Tetrachloro-m-xylene	*1.81*		µg/L	2.00		90.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.68*		µg/L	2.00		84.2	30-150			

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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 B237611 - EPA 200.7										
Blank (B237611-BLK1)				Prepared: 08/09/19 Analyzed: 08/12/19						
Iron	ND	0.050	mg/L							
LCS (B237611-BS1)				Prepared & Analyzed: 08/09/19						
Iron	3.80	0.050	mg/L	4.00		95.0	85-115			
LCS Dup (B237611-BSD1)				Prepared & Analyzed: 08/09/19						
Iron	3.97	0.050	mg/L	4.00		99.3	85-115	4.39	20	
Batch B237612 - EPA 200.8										
Blank (B237612-BLK1)				Prepared & Analyzed: 08/09/19						
Antimony	ND	1.0	µg/L							
Arsenic	ND	0.80	µg/L							
Cadmium	ND	0.20	µg/L							
Chromium	ND	1.0	µg/L							
Copper	ND	1.0	µg/L							
Lead	ND	0.50	µg/L							
Nickel	ND	5.0	µg/L							
Selenium	ND	5.0	µg/L							
Silver	ND	0.20	µg/L							
Zinc	ND	10	µg/L							
LCS (B237612-BS1)				Prepared & Analyzed: 08/09/19						
Antimony	513	10	µg/L	500		103	85-115			
Arsenic	506	8.0	µg/L	500		101	85-115			
Cadmium	497	2.0	µg/L	500		99.5	85-115			
Chromium	516	10	µg/L	500		103	85-115			
Copper	987	10	µg/L	1000		98.7	85-115			
Lead	514	5.0	µg/L	500		103	85-115			
Nickel	509	50	µg/L	500		102	85-115			
Selenium	500	50	µg/L	500		99.9	85-115			
Silver	498	2.0	µg/L	500		99.7	85-115			
Zinc	997	100	µg/L	1000		99.7	85-115			
LCS Dup (B237612-BSD1)				Prepared & Analyzed: 08/09/19						
Antimony	523	10	µg/L	500		105	85-115	1.96	20	
Arsenic	521	8.0	µg/L	500		104	85-115	3.03	20	
Cadmium	509	2.0	µg/L	500		102	85-115	2.38	20	
Chromium	515	10	µg/L	500		103	85-115	0.161	20	
Copper	986	10	µg/L	1000		98.6	85-115	0.0790	20	
Lead	525	5.0	µg/L	500		105	85-115	2.05	20	
Nickel	508	50	µg/L	500		102	85-115	0.256	20	
Selenium	527	50	µg/L	500		105	85-115	5.24	20	
Silver	509	2.0	µg/L	500		102	85-115	2.12	20	
Zinc	1070	100	µg/L	1000		107	85-115	7.26	20	

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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 B237636 - EPA 245.1										
Blank (B237636-BLK1)				Prepared & Analyzed: 08/09/19						
Mercury	ND	0.00010	mg/L							
LCS (B237636-BS1)				Prepared & Analyzed: 08/09/19						
Mercury	0.00379	0.00010	mg/L	0.00400		94.8	85-115			
LCS Dup (B237636-BSD1)				Prepared & Analyzed: 08/09/19						
Mercury	0.00383	0.00010	mg/L	0.00400		95.8	85-115	1.06	20	

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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 B237609 - EPA 300.0										
Blank (B237609-BLK1)				Prepared & Analyzed: 08/09/19						
Chloride	ND	1.0	mg/L							
LCS (B237609-BS1)				Prepared & Analyzed: 08/09/19						
Chloride	4.6	1.0	mg/L	5.00		91.3	90-110			
LCS Dup (B237609-BSD1)				Prepared & Analyzed: 08/09/19						
Chloride	4.6	1.0	mg/L	5.00		91.4	90-110	0.0438	20	
Duplicate (B237609-DUP1)		**Source: 19H0486-01**		Prepared & Analyzed: 08/09/19						
Chloride	150	10	mg/L		150			0.422	20	
Matrix Spike (B237609-MS1)		**Source: 19H0486-01**		Prepared & Analyzed: 08/09/19						
Chloride	240	10	mg/L	100	150	88.2	80-120			
Batch B237631 - SM21-22 4500 CL G										
Blank (B237631-BLK1)				Prepared & Analyzed: 08/08/19						
Chlorine, Residual	ND	0.020	mg/L							Z-01a
LCS (B237631-BS1)				Prepared & Analyzed: 08/08/19						
Chlorine, Residual	1.5	0.020	mg/L	1.29		119	66.3-134			Z-01a
LCS Dup (B237631-BSD1)				Prepared & Analyzed: 08/08/19						
Chlorine, Residual	1.5	0.020	mg/L	1.29		119	66.3-134	0.287	9.96	Z-01a
Batch B237632 - SM21-22 3500 Cr B										
Blank (B237632-BLK1)				Prepared & Analyzed: 08/08/19						
Hexavalent Chromium	ND	0.0040	mg/L							
LCS (B237632-BS1)				Prepared & Analyzed: 08/08/19						
Hexavalent Chromium	0.11	0.0040	mg/L	0.100		108	83.9-121			
LCS Dup (B237632-BSD1)				Prepared & Analyzed: 08/08/19						
Hexavalent Chromium	0.11	0.0040	mg/L	0.100		108	83.9-121	0.00	10	
Batch B237721 - SM21-22 2340C										
Blank (B237721-BLK1)				Prepared & Analyzed: 08/10/19						
Hardness	ND	2.0	mg/L							

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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 B237721 - SM21-22 2340C										
LCS (B237721-BS1)				Prepared & Analyzed: 08/10/19						
Hardness	32	2.0	mg/L	31.4		103	89.3-121			
LCS Dup (B237721-BSD1)				Prepared & Analyzed: 08/10/19						
Hardness	32	2.0	mg/L	31.4		103	89.3-121	0.00	11.2	
Duplicate (B237721-DUP1)	**Source: 19H0486-01**			Prepared & Analyzed: 08/10/19						
Hardness	80	2.0	mg/L		80			0.00	17.8	
Matrix Spike (B237721-MS1)	**Source: 19H0486-01**			Prepared & Analyzed: 08/10/19						
Hardness	100	2.0	mg/L	20.0	80	104	69.9-134			
Batch B237729 - SM21-22 2540D										
Blank (B237729-BLK1)				Prepared & Analyzed: 08/10/19						
Total Suspended Solids	ND	2.5	mg/L							
LCS (B237729-BS1)				Prepared & Analyzed: 08/10/19						
Total Suspended Solids	168	10	mg/L	200		84.0	57.6-118			
Batch B237754 - EPA 420.1										
Blank (B237754-BLK1)				Prepared & Analyzed: 08/12/19						
Phenol	ND	0.050	mg/L							
LCS (B237754-BS1)				Prepared & Analyzed: 08/12/19						
Phenol	0.53	0.050	mg/L	0.500		107	72.4-125			
LCS Dup (B237754-BSD1)				Prepared & Analyzed: 08/12/19						
Phenol	0.56	0.050	mg/L	0.500		113	72.4-125	5.28	11.1	
Batch B237765 - EPA 1664B										
Blank (B237765-BLK1)				Prepared & Analyzed: 08/12/19						
Silica Gel Treated HEM (SGT-HEM)	ND	1.4	mg/L							
LCS (B237765-BS1)				Prepared & Analyzed: 08/12/19						
Silica Gel Treated HEM (SGT-HEM)	12		mg/L	10.0		116	64-132			
MRL Check (B237765-MRL1)				Prepared & Analyzed: 08/12/19						
Silica Gel Treated HEM (SGT-HEM)	1.20	1.4	mg/L	1.40		85.6	0-200			

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QUALITY CONTROL

Drinking Water Organics EPA 504.1 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B237628 - EPA 504 water										
Blank (B237628-BLK1)				Prepared & Analyzed: 08/09/19						
1,2-Dibromoethane (EDB)	ND	0.021	µg/L							
1,2-Dibromoethane (EDB) [2C]	ND	0.021	µg/L							
Surrogate: 1,3-Dibromopropane	*1.07*		µg/L	1.05		102	70-130			
Surrogate: 1,3-Dibromopropane [2C]	*1.08*		µg/L	1.05		102	70-130			
LCS (B237628-BS1)				Prepared & Analyzed: 08/09/19						
1,2-Dibromoethane (EDB)	0.211	0.021	µg/L	0.180		118	70-130			
1,2-Dibromoethane (EDB) [2C]	0.210	0.021	µg/L	0.180		117	70-130			
Surrogate: 1,3-Dibromopropane	*0.989*		µg/L	1.03		96.4	70-130			
Surrogate: 1,3-Dibromopropane [2C]	*0.982*		µg/L	1.03		95.7	70-130			
LCS Dup (B237628-BSD1)				Prepared & Analyzed: 08/09/19						
1,2-Dibromoethane (EDB)	0.215	0.021	µg/L	0.183		117	70-130	1.65		
1,2-Dibromoethane (EDB) [2C]	0.213	0.021	µg/L	0.183		116	70-130	1.15		
Surrogate: 1,3-Dibromopropane	*1.03*		µg/L	1.05		98.6	70-130			
Surrogate: 1,3-Dibromopropane [2C]	*1.04*		µg/L	1.05		99.3	70-130			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
PR-08	pH of sample (pH 5) is outside of method specified preservation criteria.
RL-12	Elevated reporting limit due to matrix interference.
Z-01	Compound calibrated using non-linear calibration
Z-01a	SM 4500 test had calibration points outside of acceptable back-calculated recoveries. Reanalysis yielded similar results.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
608.3 in Water	
Aroclor-1016	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1016 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1221	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1221 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1232	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1232 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1242	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1242 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1248	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1248 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1254	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1254 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1260	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1260 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
624.1 in Water	
Acetone	CT,NY,MA,NH
tert-Amyl Methyl Ether (TAME)	MA
Benzene	CT,NY,MA,NH,RI,NC,ME,VA
tert-Butyl Alcohol (TBA)	NY,MA
Carbon Tetrachloride	CT,NY,MA,NH,RI,NC,ME,VA
1,2-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,3-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,4-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,2-Dichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
cis-1,2-Dichloroethylene	NY,MA
1,1-Dichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
1,1-Dichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
1,4-Dioxane	MA
Ethanol	NY,MA,NH
Ethylbenzene	CT,NY,MA,NH,RI,NC,ME,VA
Methyl tert-Butyl Ether (MTBE)	NY,MA,NH,NC
Methylene Chloride	CT,NY,MA,NH,RI,NC,ME,VA
Tetrachloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
Toluene	CT,NY,MA,NH,RI,NC,ME,VA
1,1,1-Trichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
1,1,2-Trichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
Trichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
Vinyl Chloride	CT,NY,MA,NH,RI,NC,ME,VA
m+p Xylene	CT,NY,MA,NH,RI,NC
o-Xylene	CT,NY,MA,NH,RI,NC
625.1 in Water	
Butylbenzylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
Di-n-butylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
1,3-Dichlorobenzene	MA,NC
1,4-Dichlorobenzene	MA,NC
1,2-Dichlorobenzene	MA,NC

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
625.1 in Water	
Diethylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
Dimethylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
Di-n-octylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
Phenol	CT,MA,NH,NY,NC,RI,ME,VA
2-Fluorophenol	NC
2-Fluorophenol	NC,VA
Phenol-d6	VA
Nitrobenzene-d5	VA
EPA 200.7 in Water	
Iron	CT,MA,NH,NY,RI,NC,ME,VA
Hardness	CT,MA,NH,NY,RI,VA
EPA 200.8 in Water	
Antimony	CT,MA,NH,NY,RI,NC,ME,VA
Arsenic	CT,MA,NH,NY,RI,NC,ME,VA
Cadmium	CT,MA,NH,NY,RI,NC,ME,VA
Chromium	CT,MA,NH,NY,RI,NC,ME,VA
Copper	CT,MA,NH,NY,RI,NC,ME,VA
Lead	CT,MA,NH,NY,RI,NC,ME,VA
Nickel	CT,MA,NH,NY,RI,NC,ME,VA
Selenium	CT,MA,NH,NY,RI,NC,ME,VA
Silver	CT,MA,NH,NY,RI,NC,ME,VA
Zinc	CT,MA,NH,NY,RI,NC,ME,VA
EPA 245.1 in Water	
Mercury	CT,MA,NH,RI,NY,NC,ME,VA
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
EPA 420.1 in Water	
Phenol	CT,MA,NH,NY,RI,NC,ME,VA
SM19-22 4500 NH3 C in Water	
Ammonia as N	NY,MA,CT,RI,VA,NC,ME
SM21-22 2340C in Water	
Hardness	CT,MA,RI,NC,ME
SM21-22 2540D in Water	
Total Suspended Solids	CT,MA,NH,NY,RI,NC,ME,VA
SM21-22 3500 Cr B in Water	
Hexavalent Chromium	NY,CT,NH,RI,ME,VA,NC
SM21-22 4500 CL G in Water	
Chlorine, Residual	CT,MA,RI,ME
SM21-22 4500 CN E in Water	
Cyanide	CT,MA,NH,NY,RI,NC,ME,VA

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2020
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	06/30/2020
FL	Florida Department of Health	E871027 NELAP	06/30/2020
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2020
ME	State of Maine	2011028	06/9/2021
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	06/12/2020
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2020

MEK

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19H0486

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CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 2_06262019

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Company Name: GEC
Address: 100 BROOKS DRIVE
Phone:
Project Name: DL-6
Project Location:
Project Number: 1883-8010
Project Manager:
Con-Test Quote Name/Number:
Invoice Recipient:
Sampled By: AF/CW

Reduced Turnaround Time
7-Day ☐ 10-Day ☐
PFAS 10-Day (std) ☐ Due Date:

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

Dissolved Metals Samples
○ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

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

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	[1]Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	TSS	Hardness	Salinity
1	MASS AVE TRENCH	1310	8/8/19	grab	GW	U	8	10	5			X	X	
2	CHARLES RIVER	1415	↓	↓	SW	↓	8	11	5			X	X	X

[2] Preservation Code

Courier Use Only
Total Number Of:
VIALS
GLASS
PLASTIC
BACTERIA
ENCORE

Glassware in the fridge? Y / N
Glassware in freezer? Y / N
Prepackaged Cooler? Y / N

*Contest is not responsible for missing samples from prepacked coolers

[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)

Relinquished by: (signature)	Date/Time:
	8/8/19 410
Received by: (signature)	Date/Time:
	8/8/19 16:10
Relinquished by: (signature)	Date/Time:
	8/8/19 22:20
Received by: (signature)	Date/Time:
2.4, 4.1	8/8/19 22:20
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Client Comments:

Regulatory Requirements
RGP
Other

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

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

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

Comments:

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Table of Contents

MEH

con-test ANALYTICAL LABORATORY

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

19H0486

http://www.contestlabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 2_06262019

Company Name:	GEC
Address:	60 Brooks Drive Braintree
Phone:	781-356-9140
Project Name:	DL-6
Project Location:	
Project Number:	1883-8010
Project Manager:	
Con-Test Quote Name/Number:	
Invoice Recipient:	
Sampled By:	AF/CW

Requested Turnaround Time: 7-Day ☐ 10-Day ☐ PFAS 10-Day (std) ☐ Due Date:

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

Dissolved Metals Samples: ○ Field Filtered ○ Lab to Filter

Orthophosphate Samples: ○ Field Filtered ○ Lab to Filter

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

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	[1]Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	EDB-504	624.1 TB	PCBs 608	TPH 1664	phenol	624.1	625+625 low	cyanide	metals	Ammonia	chloride TRC hexchrome
1	Mass Ave Trench	1310	8/8/19	grab	GW	UNK						X	X	X	X	X	X	X	X	X	X	X
2	Charles River	1415	↓	↓	SW	↓						X	X	X	X	X	X	X	X	X	X	X

[2] Preservation Code

Courier Use Only
Total Number Of:
VIALS ____
GLASS ____
PLASTIC 5
BACTERIA ____
ENCORE ____

Glassware in the fridge? Y / N
Glassware in freezer? Y / N
Prepackaged Cooler? Y / N
*Contest is not responsible for missing samples from prepacked coolers

[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)

Signature	Date/Time
Relinquished by: (signature) [signature]	8/8/19 410
Received by: (signature) [signature]	8/8/19 16:10
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Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Client Comments:

Detection Limit Requirements
MA:
CT:
Other:

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

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
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MWRA ☐ School ☐ MBTA ☐
WRTA ☐

Other
☐ Chromatogram
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PCB ONLY
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Comments:

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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 GEL

Received By [signature] Date 8/8/19 Time 22:20

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

Were samples within Temperature? 2-6°C T By Gun # 1 Actual Temp - 2.4, 4.1 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? N/A Were Samples Tampered with? N/A

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 Project T Analysis T ID's T Sampler Name 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? Tony, Miranda

Are there Short Holds? T Who was notified? Miranda

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? T On COC? F

Do all samples have the proper pH? Acid T<2 Base T>12

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.	15	1 Liter Plastic	4	16 oz Amb.	
HCL-	16	500 mL Amb.	2	500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	6	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass	4	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:

4 vials received, 2 labeled "Trench" G24.1 TB and 2 labeled "River" G24.1 TB