



*Environmental Engineering, Civil Engineering
Forensic Engineering, Construction Services*

**NOTICE OF INTENT FOR DISCHARGE PURSUANT TO
MASSACHUSETTS REMEDIATION GENERAL PERMIT MAG9100000**

For Property Located at:

**114-120 BROOKSIDE AVENUE
Boston, MA 02130**

Prepared For:

Brookside Green LLC
840 Summer Street, #305B
Boston, MA 02127

Prepared By:

FSL Associates, Inc.
358 Chestnut Hill Avenue, 1st Floor
Boston, MA 02135

November 27, 2018



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Environmental Engineering

Forensic Engineering

Civil Engineering

Construction Services

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U.S. Environmental Protection Agency
Office of Ecosystem Protection
5 Post Office Square – Suite 100
Mail Code OEP06-01
Boston, MA 02109-3912

And

Boston Water and Sewer Commission
Engineering Customer Services
980 Harrison Avenue
Roxbury, MA 02119

**RE: Notice of Intent for Discharge Pursuant to
Massachusetts Remediation General Permit MAG9100000
114-120 Brookside Avenue
Boston, MA 02130**

To Whom It May Concern:

On behalf of Brookside Green LLC, FSL Associates, Inc. (“FSL”) has prepared the attached Notice of Intent (NOI) for coverage under the Remediation General Permit (RGP) MAG910000 for the discharge of construction dewatering effluent into the Charles River via the City of Boston storm drainage system. Temporary construction dewatering discharge is scheduled to occur during the construction of a 4-story residential apartment building with a partial basement. The development project is to take place at 114-120 Brookside Avenue in the Jamaica Plain neighborhood of Boston, Massachusetts (the subject Site). Refer to the attached **Figure 1** for the site locus.

This permit application was prepared by FSL Associates, Inc. (“FSL”) on behalf of Brookside Green LLC, the owner of the subject property with an address of 840 Summer Street, #305B, Boston, MA 02127. The required Notice of Intent Form contained in the RGP permit and Boston Water and Sewer Dewatering Discharge Permit Application are included in **Appendix A** and all supporting documentation is included in **Appendix B** and **Appendix C**. A Best Management Practice Plan (BMPP) is contained in **Appendix D**. This project is considered Activity Category III as defined in the RGP. Category III is defined as Contaminated Site Dewatering. Based on historical and current soil and groundwater analysis completed at the Site and constituents of concern detected under Subcategory A (arsenic, lead, cadmium, selenium,

total chromium, copper, nickel, and zinc), Technology Based Effluent Limitations (TBELs) and Water Quality Based Effluent Limitations (WQBELs) for Type A contamination apply.

Applicant

Brookside Green LLC
840 Summer Street, #305B
Boston, MA 02127

Attention: Mr. Scott Johnson
Telephone: (617) 777-5460

Contractor

Z. Reid Enterprises
180 Belmont Street
Brockton, MA 02301

Attn: Mr. Mackenzie Carpenter
Phone: (508) 313-6669

1.0 BACKGROUND AND SITE HISTORY

The Site is an approximately 9,820 square foot parcel of land located at 114-120 Brookside Avenue in a residential area of the Jamaica Plain neighborhood of Boston, Massachusetts. The site had formerly been improved with two connected multi-story residential apartment building, which were reportedly demolished in August 2018. Historically the Site has been utilized as a used auto body shop, laundry facility, and a woodworking facility.

2.0 EXISTING CONDITIONS

The site was most recently improved with two (2) connected structures which covered the majority of the subject site an asphalt paved driveway that covered the rest of the property. The site is currently unimproved and surrounded by construction fencing, with all improvements having been demolished and removed from the site in August 2018. The adjoining properties consist of a variety of mixed commercial, industrial, and residential land use. Abutters to the north and east are residential properties. The abutter to the west is a vacant commercial building which was formerly occupied by artist studios. Abutters to the south include a metal shop and an art studio.

The Site is located on the southern side of a relatively flat section of Brookside Avenue. The Site Slopes westerly towards Brookside Avenue. The Site is located at approximately 12 m (38 ft) above mean sea level.

3.0 PROPOSED SCOPE OF SITE DEVELOPMENT

The proposed development is understood to consist of a building which will occupy the entirety of the 9,820 square foot property parcel. The building will consist of four (4) stories above-grade and a basement underneath. The maximum depth of excavation for the construction of the building foundation will be approximately 16.5 feet below-grade. The excavation for the elevator pit for the proposed building will be advanced to a maximum depth of 15.5 feet below-grade. The elevator pit is to be located towards the eastern corner of the proposed building. The excavation for the elevator pit is scheduled to be the source of the discharge.

4.0 SITE ENVIRONMENTAL SETTING

A review of the current Massachusetts Department of Environmental Protection (MADEP) Priority Resource Map indicates that the subject site is not located within Zone II of a public water supply, an Interim Wellhead Protection Area or Zone A of a Class A surface water supply reservoir. There are no known private or public drinking water supply wells located within the site boundaries, nor within a half mile of the site. Site groundwater is not classified as a current or potential drinking water source. The nearest surface water body is Jamaica Pond, located approximately 2,500 feet to the northwest of the Site.

Future site plans are to redevelop the Site for a multi-unit residential building. In accordance with 310 CMR 40.0361, the applicable soil reporting category for this site is RCS-1. In accordance with 310 CMR 40.0362, the applicable groundwater reporting category for this site is RCGW-2. A copy of the MADEP Phase I Site Assessment Map is included in **Appendix B**.

5.0 SUBSURFACE CONDITIONS

5.1 Subsurface Investigations

June 2015

On June 8, 2015, FSL personnel conducted subsurface investigations along the western Property border and in the southern portion of the subject Site parking lot. FSL personnel supervised drilling operations performed by Lakeshore Environmental, Inc. utilizing a truck mounted geoprobe providing direct push to conduct test borings. A total of three (3) soil borings were advanced during the subsurface investigation: two (2) along the western property border along Brookside Avenue and one (1) in the southern portion of the Site parking lot area. Soil borings ranged in depth from 10 to 19 feet bgs. Urban fill, natural strata, and un-natural fill materials were observed in soil borings. A layer of coal ash was observed in FSL-S1 at the 0-4 ft bgs interval. In FSL-S2, a strong petroleum odor was emitted in the 0-4 ft bgs interval, and black oil staining was observed in the 4-8 ft bgs interval. Red clay remnants were observed in the 0-4 ft bgs and 10-12 ft bgs intervals from FSL-S3. Groundwater was encountered at a depth of approximately 15 ft bgs in FSL-S1.

October 2017

A geotechnical investigation was conducted on the subject site on October 30, 2017. The investigation included the advancement of one (1) soil boring. The soil boring was advanced by New Hampshire Boring Contractors of Derry, New Hampshire, under the direction of Geotechnical Services Inc. (GSI) of Boston, MA. The boring was drilled using a truck - mounted drill rig (Mobile Drill B-53). The test boring was advanced using 4-in. I.D. flush-jointed casing with a roller bit and wash water to advance the borehole. The boring was drilled to a depth of 31-ft below the existing grade. GSI recovered soil samples at the ground surface and subsequently at 5-ft intervals in the soil boring using a standard split spoon sampler driven in accordance with ASTM D-1556.

Based on the results from the test boring, GSI identified urban fill, sand deposits and silt deposits in the soil boring. Urban Fill soil with loose sand and gravel, and brick remnants were observed from 1-9 ft below existing grade. Loose fine to coarse sand was encountered in boring B-1 from 9 to 12-ft below grade. The Sand Deposit may be naturally deposited or possibly Fill soils. Very stiff, light brown silt with sand and clay was encountered from 12 to 24-ft below the existing grade in boring B-1. Glacial Outwash with medium dense to dense sand and gravel was encountered from 24-ft to 31-ft in boring B-1. Groundwater was measured in boring B-1 upon completion of the test boring at approximately 9-ft below the existing grade. It should be noted that a petroleum product was identified during the advancement of the boring B-1 which was encountered at a depth of 9-ft below grade.

August 2018

Following the change in ownership of the property after 2015, FSL was contracted by the current owner of the property to collect six (6) composite soil samples from across the site on August 16, 2018 in order to characterize soil for off-site disposal. Urban fill was generally encountered across the site and was consistent with soils encountered during FSL's 2015 subsurface investigation. The eastern portion of the site, having been formerly covered with two buildings, was exposed for

FSL's August 16, 2018 sampling event. Soil from the eastern portion of the site was also shown to contain granular urban fill soils with brick, ash, coal ash, and some cobbles.

5.2 Subsurface Soil Analytical Results

June 2015

During the June 2015 sampling event, soil samples were collected during the subsurface investigation and were relinquished to RI Analytical, Inc. (RI Analytical), a Massachusetts State certified laboratory. Two (2) soil samples were collected from FSL-S1 at the 0-4 ft bgs and 8-12 ft bgs intervals for analysis of VOCs, VPH, EPH/PAH and RCRA 8 Metals. One (1) soil sample was collected from FSL-S2 at the 0'-4' ft bgs interval for analysis of RCRA 8 Metals. Two (2) soil samples were collected from FSL-S3 at the 8-10 ft bgs and 10-12 ft bgs intervals for analysis of VOCs, VPH, EPH/PAH and RCRA 8 Metals. Lead was detected in the soil sample collected from FSL-S2 at the 0-4 ft bgs interval at 650 parts per million (ppm), above the Massachusetts Contingency Plan (MCP) Reportable Concentration Soil Category 1 (RCS-1) standards. All other analytes detected in soil were below applicable reportable concentrations.

August 2018

During the August 2018 sampling event, six (6) composite soil samples were relinquished to RI Analytical to be analyzed according to Massachusetts Interim Policy No. COMM-97-001 ("Reuse and Disposal of Contaminated Soil at Massachusetts Landfills") and included testing for arsenic, cadmium, chromium, lead, mercury, conductivity, flashpoint, pH, poly-chlorinated biphenyls (PCBs)-8082, reactivity, semi-volatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH), and VOCs. Analysis for Toxicity Characteristic Leaching Procedure (TCLP) according to Method 1311, 40 CFR § 261.24, for the RCRA 8 metals was also conducted on all six soil samples, as was testing for the remaining MCP 14 metals.

TPH was detected at concentrations ranging from 90 ppm to 390 ppm in soil samples S-1, S-3, S-4, S-5, and S-6. Analysis for EPH/PAH was conducted on soil sample S-2, given the olfactory evidence of petroleum contamination within this sample during the sample collection process. EPH fractions C9-C18 aliphatics, C19-C36 aliphatics, and C11-C22 aromatics were detected at concentrations of 65 ppm, 280 ppm, and 220, ppm, respectively. These are all well below their applicable Reportable Concentrations. PAH constituents phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, and benzo(a)pyrene were also detected, albeit below their applicable reportable concentrations. VOC constituents tetrachloroethene (PCE), toluene, 1,2,4-trimethylbenzene, and xylene were detected in soil sample S-1 (PCE was also detected in soil sample S-2). The PCE concentrations in soil samples S-1 and S-2 were 0.16 ppm and 0.37 ppm, respectively, both of which are below the RCS-1 Reportable Concentration of 1.0 ppm for PCE. Toluene, 1,2,4-trimethylbenzene, and xylene were all detected well below their applicable Reportable Concentrations. Several SVOC constituents were detected at varying concentrations in some of the six (6) soil samples; however, all of these were detected below their applicable Reportable Concentrations. PCBs were not detected in any of the soil samples above the laboratory detection limits with the exception of samples S-4 and S-6. Aroclor-1254 and Aroclor-1260 were detected at concentrations of 0.1 ppm and 0.2 ppm in soil sample S-4, respectively, while Aroclor-1260 was detected at a concentration of 0.1 ppm in soil sample S-6. All three of these PCB detections are below the applicable RCS-1 Reportable Concentration of 2.0 ppm for PCBs. MCP 14 metals arsenic, barium, cadmium, chromium, lead, mercury, beryllium, nickel, vanadium, and zinc were detected at varying concentrations in some of the six (6) soil

samples; however, with the exception of lead, all of these were below their applicable RCS-1 Reportable Concentrations. Lead was detected at concentrations of 280 ppm and 570 ppm in soil samples S-1 and S-4, respectively.

TCLP for the RCRA 8 metals was below the laboratory detection limits for all of the metals tested in each of the six (6) samples with the exception of TCLP-barium and TCLP-lead in soil samples S-1 (barium only) and S-4 (barium and lead). TCLP-barium was detected at concentrations of 0.71 mg/l and 0.65 mg/l in soil samples S-1 and S-4, respectively, both detections of which are well below the federal toxicity characteristic concentration of 100 mg/l for barium. TCLP-lead was detected at a concentration of 0.65 mg/l in soil sample S-4, which is well below the federal toxicity characteristic concentration of 5.0 mg/l for lead.

Refer to the attached **Table S1** for a summary of historic and current soil analytical results.

6.0 MCP REGULATORY STATUS

The site is not currently listed as a MADEP disposal site. Based on the observation of coal ash and other anthropogenic fill material in several soil borings and test pits advanced on the subject site, as well as the MADEP definition of historic fill, FSL believes the detected levels of lead in the soil samples FSL-S2 0-4', S-1, and S-4 above the RCS-1 Reportable Concentrations are attributable to historic fill. Metals, such as lead, are both naturally occurring and found in man-made materials (paint, fuel, fertilizer, etc.) that are widely distributed in the environment. Naturally occurring lead, as well as other metals, in wood and coal are often found concentrated in ash residue. According to the 310 CMR 40.0006, historic fill is defined as:

- a) Ubiquitous and consistently present in the environment at and in the vicinity of the disposal site of concern; and attributable to geologic or ecological conditions, or atmospheric deposition of industrial process or engine emissions;
- b) Attributable to coal ash or wood ash associated with fill material;
- c) Releases to groundwater from a public water supply system; or
- d) Petroleum residues that are incidental to the normal operation of motor vehicles.

Based on the observation of coal ash and other anthropogenic fill material (i.e. red clay brick and concrete) in several soil boring intervals, and test pits as well as the MADEP definition of historic fill, FSL believes the detected levels of lead in the soil sample FSL-S2 0-4', S-1, and S-4 above the RCS-1 Reportable Concentrations are attributable to historic fill, and are exempt from the reporting requirements of the MCP under 310 CMR 40.0317.

7.0 GROUNDWATER ANALYTICAL DATA

June 2015

On June 11, 2015, FSL personnel purged monitoring wells FSL-MW1 and FSL-MW2 utilizing low flow peristaltic pump techniques prior to sampling (purging a minimum of three well volumes), and then collected groundwater samples from each well using dedicated tubing. Groundwater was encountered at approximately 9.48 to 14.39 feet bgs. The two (2) groundwater samples were relinquished to RI Analytical to be analyzed for VOC, VPH, EPH/PAH and RCRA 8 Metals. All VOC, VPH, EPH/PAH and RCRA 8 Metals analytes from both groundwater samples were below the laboratory detection limits with the exception of the following: VPH constituent C₉-C₁₂ aliphatics, VOC constituents chlorobenzene, 1,3-dichlorobenzene, 1,2-dichlorobenzene, 1,4-dichlorobenzene, and heavy metals arsenic and barium. All

of these detections were well below their applicable MADEP reportable concentrations.

August 2018

On August 24, 2018, FSL personnel purged monitoring well FSL-MW2 utilizing low flow peristaltic pump techniques prior to sampling (purging a minimum of three well volumes), and then collected groundwater samples from each well using dedicated tubing. Groundwater was encountered at approximately 14.45 feet bgs. The groundwater sample was relinquished to Alpha Analytical of Mansfield, MA, to be analyzed for total dissolved solids (TDS) and full USEPA remediation general permit (RGP) parameters for NPDES Permit No. MAG910000. dissolved RGP Metals. TDS (1,500 mg/l) and total suspended solids (TSS; 210 mg/l) were detected above their respective RGP discharged limitations of 30 mg/l and 30 mg/l, which require treatment before discharge under the RGP. Total heavy metals arsenic, lead, iron, and zinc were detected at concentrations of 0.0015, 0.0786, 3.540, and 0.0227 milligrams per liter (mg/l), respectively. All of these with the exception of lead were below the MADEP reportable concentrations and applicable TBEL or QBEL (refer to section 8.0 below for a discussion of the TBELs and QBELs). Total lead was detected above the MADEP reportable concentration of 0.010 mg/l and also above the applicable QBEL concentration of 0.00419 mg/l. FSL proceeded to return to the site on September 4, 2018 in order to collect a groundwater sample from the same well for dissolved metals analysis. August 24, 2018 analytical data are summarized in the attached **Table 1**.

On August 27, 2018, the receiving water from the Charles River in the vicinity of the Outfall No. CSO-023 was sampled and analyzed for the following: pH, hardness, ammonia, and RGP total metals (antimony, arsenic, lead, cyanide, iron, selenium, thallium, beryllium, cadmium, total chromium, mercury, nickel, silver, and zinc). Total ammonia, antimony, selenium, cadmium, chromium VI, chromium III, mercury, nickel, and silver were all below the laboratory detection limits. VOCs acetone and benzene were also below the laboratory detection limits. Remaining receiving waters analytical data are summarized in the attached **Table 2**.

September 2018

On September 4, 2018, FSL personnel purged monitoring well FSL-MW2 utilizing low flow peristaltic pump techniques prior to sampling (purging a minimum of three well volumes), and then collected groundwater samples from each well using dedicated tubing. Groundwater was encountered at approximately 14.5 feet bgs. The groundwater sample was relinquished to Alpha Analytical to be analyzed for pH, alkalinity, hardness and dissolved RGP metals. The pH was detected at 6.3, outside of the RGP discharged range of 6.5-8.3 which require treatment before discharge under the RGP. Dissolved lead was detected at a concentration of 0.0020 mg/l. This is below the MADEP reportable concentration and also below the applicable QBEL. September 4, 2018 analytical data are summarized in the attached **Table 1**.

8.0 GROUNDWATER TREATMENT SYSTEM

Based on the groundwater analytical data collected from the site, raw discharged groundwater is expected to contain TSS and heavy metals. pH readings of site groundwater were also detected slightly below the RGP acceptance range at 6.3 SU. The MassDEP has approved a dilution factor of 132 (based upon a 7Q10 downstream flow of 18.9 million gallons per day (MGD)). This dilution factor and the analytical data collected from the site and receiving waters were used to calculate Water Quality Based Effluent Limitations (QBELs). It was determined that Technology Based Effluent Limitations (TBELs) apply

for all Inorganics, VOCs, SVOCs, and Fuels Parameters, with the exception of: the heavy metal lead, where the WQBEL will apply. The WQBEL calculation spreadsheet and TBEL and WQBEL effluent limitations are included in **Appendix B**.

Based upon the soil and groundwater analytical data collected to-date, the proposed groundwater treatment system for this project consists of an influent equalization tank, Oil Water Separator (OWS) tank, electric transfer pumps, bag filters, liquid phase activated carbon adsorbers, an effluent flow meter, and associated fittings and hoses. Based upon the total metals and dissolved metals analytical data, it is assumed that any metals present in the raw water are associated with the Total Suspended Solids (TSS) and can be removed by settling followed by mechanical filtration such as bag filtration. If base treatment system components cannot lower metals concentrations below discharge limits, an Ion Resin Exchange Filter will be employed to ensure discharged groundwater meets all applicable TBELs and WQBELs. The treatment system schematic is depicted on **Figure 5**.

A 2,000-gallon mix tank with an adjustment skid may be utilized to mix in a Sodium Hydroxide solution to adjust the effluent pH to be within the Technology Based Effluent Limitations set by the RGP.

In accordance with Section F.2 of the NOI, the following information is provided for the Sodium Hydroxide solution that may be utilized (if necessary) for pH adjustment:

- a.) Sodium Hydroxide Solution (refer to attached SDS form)
- b.) pH Adjustment
- c.) SDS form attached with this application
- d.)
 - Continuous, based on pH electrode readings;
 - 8-hour work days; 5 days a week;
 - Volume Load:
 - Average – 60 mL of solution per hour / 480 mL of solution per day
 - Maximum - 120 mL of solution per hour / 960 mL of solution per day
 - LMI chemical metering pump activated to feed solution into the system via inline static mixer, based on pH electrode readings, into 2,000-gallon mix tank with an impeller mixer.
- e.) store in 15-gallon poly drums on spill containment kits with labels placed in accordance to all local, state and federal regulations

No pollutants will be added in concentrations which exceed permit effluent limitations as the solution only includes sodium hydroxide, sodium chloride and water. Applicable water quality standards will not be exceeded as the mixing tank will be monitored by pH probes to ensure the discharge level meets all applicable TBELs and WQBELs. No pollutants will be added that would justify the application of permit conditions that are different from or absent in this permit.

9.0 GROUNDWATER DISCHARGE

Dewatering activities are anticipated to be required based upon the maximum depth of excavation (15.5 feet bgs) and the high groundwater level measured on the subject Site during the October 2017 site assessment activities (9 feet bgs). On-site recharge of groundwater collected during construction activities at this site is anticipated to be unfeasible. Therefore, groundwater will be required to be discharged off-site via the municipal storm drain. Correspondence with personnel at BWSC indicates that the storm drainage system that services Brookside Avenue ultimately discharges via Outfall No. CSO-023 into the Charles River. Outfall No. CSO-023 is approximately 4.7 kilometers (2.9 miles feet) to the north-

northeast of the subject site. The location of Outfall No. CSO-023 is depicted on **Figure 4**. The latitude and longitude coordinates of Outfall No. CSO-023 are 42.351760 North and 71.092320 West. The latitude and longitude coordinates of the storm drain grate in Brookside Avenue (the primary groundwater discharge point for this project) is 42.3108 West and 71.1056 West.

10.0 SUMMARY

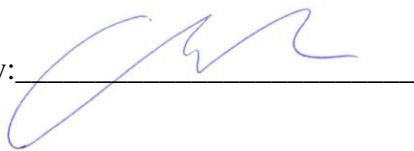
FSL is pleased to submit this application on behalf of Brookside Green LLC for the purpose of obtaining authorization to discharge groundwater from the project construction site under the provisions of the Massachusetts Remediation General Permit MAG9100000.

Based upon the soil and groundwater analytical data collected to-date, treatment of encountered groundwater will need to be treated prior to discharge in order to meet the requisite TBELs and WQBELs. The proposed groundwater treatment system for this project consists of an influent equalization tank, Oil Water Separator (OWS) tank, electric transfer pumps, bag filters, liquid phase activated carbon adsorbers, an effluent flow meter, and associated fittings and hoses. A mix tank with an adjustment skid may be utilized to mix in Sodium Hydroxide to adjust the effluent pH to be within the Technology Based Effluent Limitations set by the RGP. Based upon the total metals and dissolved metals analytical data, it is assumed that any metals present in the raw water are associated with the Total Suspended Solids (TSS) and can be removed by settling followed by mechanical filtration such as bag filtration. If base treatment system components cannot lower metals concentrations below discharge limits, an Ion Resin Exchange Filter will be employed to ensure discharged groundwater meets all applicable TBELs and WQBELs.

Thank you for the opportunity to provide you with this application. Please feel free to contact the undersigned should you have any questions.

Sincerely,

Prepared by:



Andrew J. Pieroni
Environmental Engineer

Reviewed by:



Jarod R. Cournoyer, E.P.
Vice President: Environmental

GENERAL TERMS AND CONDITIONS

The terms and conditions set forth herein are attached to and form an integral part of the Agreement between FSL Associates, Inc. (the "Company") and **Brookside Green LLC** (the "Client") regarding certain engineering services ("this Agreement" or the "Agreement"). This attachment contains clauses that limit the Company's liability to Client and require Client to indemnify Company for some claims for damages. The entire Agreement should be reviewed carefully, and Client may choose to consult with an attorney. Company and Client agree as follows:

Section 1. Services

Company shall provide Client with the Services described in the scope of services hereto attached with respect to the property herein above identified in this Agreement (the "Site" or "On-Site"), under the terms and conditions set forth herein. Company's Services will be performed on behalf of and solely for the exclusive use of Client for the purposes set forth in this Agreement and for no other purpose. Client acknowledges that Company's Services require decisions, which are based upon judgment stemming from limited data rather than upon scientific certainties. Client acknowledges the inherent risks to Client and its property associated with the work described in this Agreement and with underground work in general. Company reserves the right to refuse to undertake services that it determines may involve risks or activities beyond those currently contemplated. Client acknowledges that other qualified persons and entities may be available to carry out such services. No attempt will be made to determine compliance of present or former owners or operators of the Site with federal, state or municipal environmental or land use laws or regulations. The Services do not include directly or indirectly storing, arranging for or actually transporting, disposing, treating or monitoring oils or hazardous materials, unless otherwise expressly specified in this Agreement.

Section 2. Billing and Payment

Client will pay Company for services performed in accordance with the rates and charges set forth in this Agreement. Client will pay all invoices submitted by the Company for the Services in accordance with the terms specified in the invoice(s). Invoice balances remaining unpaid after the due date provided in the invoice will bear interest from invoice date at 1.5 percent per month or at the maximum lawful interest rate, if such lawful rate is less than 1.5 percent per month, except for charges disputed in good faith. If Client fails to pay undisputed invoice charges in full within forty-five (45) days after invoice date, Company may, at any time, and without waiving any other rights or claims against Client and without thereby incurring any liability to Client, elect to terminate performance of the Services upon ten (10) days prior written notice by Company to Client.

Notwithstanding any termination of Services by Company for non-payment of invoices, Client shall pay Company in full for all Services rendered in accordance with this Agreement and its terms and conditions by Company to the date of termination of Services plus all interest, termination costs and expenses incurred by Company and related to such termination. Client shall be liable to reimburse Company for all costs and expenses of collection, including reasonable attorneys' fees for such Services. The failure to exercise any rights or remedies, whether specified herein or otherwise provided by law, shall not be deemed a waiver of any such rights or remedies, nor preclude the exercise of such rights or other rights and remedies under this instrument, or at law.

Section 3. Right of Entry

Client hereby grants to Company permission for Right of Entry from time to time, by Company, its agents, staff, consultants, and subcontractors, upon the Site for the purpose of performing the Basic Services (as described in this Agreement), including without limitation, the making of test borings, installation of wells, trenches, and other subsurface and surface structures, the installation and operation of equipment and the removal of treatment system(s), pursuant to the Scope of Services.

Section 4. Site Work

a. Normal Disturbance. Client hereby recognizes that the use of exploration, excavation, construction, and other heavy equipment may unavoidably affect, alter or damage the terrain and affect vegetation, buildings, structures and equipment in, at or upon the Site. Client accepts the fact that this is inherent in Company's work. Reasonable care will be exercised in locating underground structures in the vicinity of proposed subsurface work. Company will take reasonable precautions to limit damage to Site. If Company is required to restore the land to its former conditions, this will be accomplished and the cost will be added to our fee unless such restoration is specifically included in the Scope of Services or is due to damage caused by the negligence or willful misconduct of Company or its officers, employees or subcontractors.

b. Damage to Latent Subterranean Structures. Company will exercise due and reasonable care in locating subterranean structures in the vicinity where proposed excavations will take place and will contact appropriate public utilities and review plans provided by Client and/or the Owner of the Site relating to the locations of subterranean structures. Provided Company has proceeded with due and reasonable care, Company will not be liable for damages or injury arising from damage to or interference with subterranean structures (including, without limitation, pipes, tanks, telephone cables, etc.) which are not called to Company's attention and/or not correctly shown on the plans furnished by Client or others in connection with work performed under this Agreement. The Client will be named as an additional insured on the drilling insurance policy of Company and/or its subcontractors.

Section 5. Sample Disposition

Company will preserve such soil, water, and other samples, if any obtained from the Site for such period of time, as Company in its sole

discretion deems appropriate. No such samples will be discarded before thirty (30) days after completion of the work without prior written notice to Client, provided, however, that samples on which soil or chemical laboratory testing has been performed may be thereafter discarded by Company without such notification. Samples will be available at Company's office for inspection by Client and others authorized by Client; samples will be shipped to a location selected by Client at Client's expense.

Section 6. Standard of Care

Client agrees that Company's services are on behalf of and for the exclusive use of Client for the purposes set forth in this Agreement. Client recognizes that Company's services require decisions, which are not based upon pure science but rather upon judgmental considerations, including without limitation, the economic feasibility of alternate designs. Company will perform Services in accordance with generally accepted practices of engineers and geohydrologists undertaking similar studies or actions in the same locale under like or identical circumstances. Client agrees that such services will be rendered without any other warranty, expressed or implied, except as otherwise provided in this Agreement. In providing reports, Company may review and interpret certain information provided to it by third parties. Company will not conduct an independent evaluation of the accuracy or completeness of such information. It is understood and agreed that in seeking the professional services of Company under this Agreement, the Client is requesting Company to undertake uninsured obligations for the Client's benefit involving the presence or potential presence of oil or hazardous materials. The Client hereby explicitly recognizes that even a comprehensive sampling and testing program implemented with the appropriate equipment and experienced personnel under the direction of a trained professional who functions in accordance with a professional standard of practice may fail to detect certain conditions, because they are hidden and, therefore, cannot be considered in development of subsequent subsurface exploration programs. Further, because geological and soil formations are inherently random, variable and indeterminate (heterogenous) in nature, the Professional Services and opinions provided by Company under this Agreement are not guaranteed to be a representation of complete site conditions, which are subject to change with time as a result of natural or man-made processes. Although the Services are extensive, findings and conclusions are limited to and by the information obtained. Company makes no expressed or implied representations or warranties regarding any changes in condition of the Site after the date of the on-site inspections(s).

Section 7. Insurance

The Company shall obtain and maintain for as long as the Company has obligations under this Agreement, at its sole cost and expense, the following insurance with a financially sound and responsible insurance company or companies authorized to do business in the Commonwealth of Massachusetts under generally accepted and practiced forms of policy:

- (A) Worker's Compensation Insurance, including occupational disease benefits, as prescribed by applicable law.
- (B) Commercial General Liability Insurance including blanket contractual liability sufficient to address the indemnification obligations of Company under this Agreement, if any. The following minimum limits of liability shall be maintained: One Million (\$1,000,000) Dollars each occurrence; One Million (\$1,000,000) Dollars personal and advertising injury; Two Million (\$2,000,000) Dollars general policy aggregate.
- (C) Automobile, Bodily Injury and Property Damage Liability Insurance in an amount not less than the compulsory coverage required by applicable law. Such insurance shall extend to owned and leased automobiles used in the performance of the activities under this Agreement.
- (D) Professional Liability (errors and omissions) Insurance including coverage for bodily injury and/or property damage arising out of the negligent acts, errors and omissions of the Company in the performance of the professional services under this Agreement and coverage for contractual liability assumed under this Agreement, if any. The limits of liability of such insurance shall be not less than One Million (\$1,000,000) Dollars for each claim and Two Million \$2,000,000) Dollars in the aggregate.

The above insurance shall be standard policies written on an occurrence basis (except for the Professional Liability/Contractors Pollution Insurance which shall be on a claims made basis). The insurance specified above shall provide that such insurance is primary coverage with respect to Company's activities hereunder. Said policies shall name Client as an additional insured and/or loss payee, as appropriate, and shall contain a provision stating that the insurer shall endeavor to provide at least twenty (20) days prior written notice to the Client before such coverage is cancelled, reduced or otherwise materially altered.

Certificates of Insurance showing such insurance coverage as required by this Section will be forwarded to Client under separate cover.

To the extent allowed under all applicable law, Company hereby waives and relinquishes, and agrees to request of all its subcontractors to waive and relinquish, any right of subrogation it might have against Client under the provisions of the Workers' Compensation Act in Massachusetts on account of any injury to its employees or employees of its subcontractors caused in whole or in part by any negligent or wrongful act or omission of Client, so long as such waiver shall not affect the applicable insurance policy or any right, claim or defense hereunder or the premium therefore.

Client hereby releases Company and all its subcontractors from any and all liability for any loss or damage caused by any of the so-called broad form coverage casualties, even if such casualty shall be brought about by the fault or negligence of Company or any of its subcontractors. Client agrees that its property casualty insurance policies will include such a release or waiver of subrogation clause.

Section 8. Client's Duty to Notify Company of Hazards

Client represents and warrants that it will provide Company with any and all information known to or suspected by Client with respect to (1) the existence or possible existence at, on or under the Site of any hazardous materials, pollutants or asbestos as defined in the Federal Water Pollution Control Act, the Federal Comprehensive Environmental Response, Compensation and Liability Act of 1980, the Resource Conservation and Recovery Act of 1976, or under the provisions of federal, state and local laws of similar import now or hereafter existing; (2) any condition known to Client to exist in, on, under or in the vicinity of the Site which might present a potential safety hazard or danger to human health or the environment; or (3) any permit, manifest, title record or other record of compliance or non-compliance with any federal, state or local laws relating in any way, directly or indirectly, to the past or present environmental conditions at the Site. Company acknowledges that Client makes no representations or warranties as to the accuracy or completeness of information contained in materials provided to the Company by the Client and prepared by third parties.

Section 9. Hazardous Materials; Pollutants; Asbestos

If unanticipated, potentially hazardous materials, pollutants or asbestos are encountered during the course of the work, Company shall have the right (1) to suspend its work immediately and (2) to terminate the work described in the Scope of Services upon ten (10) days written notice of intent to terminate, unless Company and Client agree upon a mutually satisfactory amendment to this Agreement that may include a revision of the Scope of Services, adjustment of budget estimates, revised Terms and Conditions, and revised fees. Client shall remain liable for and shall pay all fees and charges incurred in accordance with the provisions of this Agreement through the date of termination, notwithstanding Client and Company not having reached a new, mutually satisfactory, revision of this Agreement.

Section 10. Confidentiality

Company will not disclose information regarding this Agreement, Company's Services or its Report, except (1) to Client; (2) to parties designated by Client; or (3) as provided in Section 11 below. Information which is in the public domain or which is provided to the Company by third parties is accepted from the foregoing non-disclosure agreement.

Section 11. Public Responsibility

Client acknowledges that the Client or the Site owner, as the case may be, is now and shall remain in control of the Site for all purposes at all times. Company does not undertake to report to any Federal, state, county or local public agencies having jurisdiction over the subject matter any conditions existing at the Site from time to time which may present a potential danger to public health, safety or the environment. Client agrees that Client will timely notify each appropriate Federal, state, county and local public agency, as required by law, of the existence of any condition at the Site, which may present a potential danger to public health, safety or the environment. Company will promptly notify Client when such condition becomes evident. It is understood, however, that this is not a contract for the rendition of legal services and no opinions, advice, counseling or any other assistance pertaining to the rendering of legal advice will be provided by Company. Client specifically acknowledges responsibility to notify appropriate authorities if same is recommended by Company, and further releases and holds Company harmless from any responsibility pertaining to such notification.

Notwithstanding the provisions of Section 10 and this Section 11, Company will comply with judicial orders or governmental directives, and federal, state, county and local laws, regulations and ordinances and applicable codes regarding the reporting to the appropriate public agencies of findings with respect to potential dangers to public health, safety or the environment, but Company shall have no liability to Client or to any other person or entity from the failure so to comply. To the extent feasible, Company will provide Client with prior notice of Company's proposed reporting, if any. Company shall have no liability or responsibility to Client or to any other person or entity for reports or disclosures made in accordance with such statutory or other lawful requirements.

Section 12. General Indemnity

The Client agrees to hold harmless, indemnify, and defend Company and its officers and employees from and against any and all claims, losses, damages, liability and costs, including but not limited to, costs of defense, arising out of or in any way connected with (i) any breach by Client or its officers, employees, agents, or subcontractors of the terms and conditions of this Agreement; (ii) any act, omission or negligence of Client or its officers, employees, agents, or subcontractors; or (iii) the presence, release, or migration of contaminants of any kind on or about the Site. Furthermore, the Client hereby agrees to indemnify and hold Company harmless against any and all claims that may arise from reliance on services beyond the Scope of Services described herein, from third parties' reliance upon same or from reliance on said services, from any party, whether party to this Agreement or not, unless Company has failed to exercise the prevailing standard of care for similarly situated professionals, and further against the negligence of private subcontractors pertaining to the Services rendered pursuant to this Agreement. This indemnity in no way limits any potential cause of action the Client may have against such private subcontractors.

Section 13. Limitation of Professional Liability

The Client hereby agrees that to the fullest extent permitted by law, Company's total liability to the Client for any and all liability, claims and losses, expenses, damages or claimed expenses whatsoever arising out of or in any way related to this Agreement from any cause or causes, including, but not limited to, Company's negligence, errors, omissions, strict liability or breach of warranty or contract, shall not exceed \$50,000.00.

Section 14. Delays

In the event that Company is obstructed or delayed in the completion of the Services by any act of the Client or the Client's agents or by any act beyond the control of Company, including, but not limited to, inclement weather, illness, strikes, failure of equipment, unanticipated degree of difficulty encountered in performing the Services, or delay created within or by approving agencies, then the time herein fixed for the

completion of the Services shall be extended for a period of time equivalent to the time lost by reason of any or all of the aforementioned causes.

Section 15. Ownership of Documents

All documents, including original field notes and data, are and shall remain the sole and exclusive property of Company as instruments of service. The Client may, at its expense, obtain copies, in consideration of which the Client will use them solely in connection with the above-described project.

Section 16. Disputes

If a dispute arises out of or relates to this Agreement, or the performance or breach thereof, the parties agree first to try in good faith to settle the dispute by mediation under the commercial Mediation Rules of the American Arbitration Association, before resorting to arbitration. Thereafter, any remaining unresolved controversy or claim arising out of or relating to this Agreement, or the performance or breach thereof, shall be settled by arbitration in accordance with the Commercial Arbitration Rules of the American Arbitration Association, conducted in Boston, Massachusetts. The sole Arbitrator shall be a retired or former Judge of the Trial Court of Massachusetts. Judgment upon the award rendered by the Arbitrator may be entered in any court having jurisdiction thereof.

Section 17. Authorization

Each of the signatories to this Agreement hereby certifies that he/she is presently authorized to enter into this Agreement on behalf of the Company or the Client, as the case may be, and to bind such party to all terms, representations, and agreements herein contained.

Section 18. Construction of Agreement

This instrument, which may be executed in multiple counterparts, constitutes a legal and binding contract, is to take effect as a sealed instrument, sets forth the entire contract between the parties hereto and their respective heirs, legal representatives, successors and assigns, supersedes all prior proposals, purchase orders, or agreements between the parties with respect to the subject matter hereof, and may be canceled, modified or amended only by a written instrument duly executed by both the Client and Company. The Client hereby agrees that he/she/it has read and understands all the terms of this Agreement and either has reviewed this Agreement with legal counsel or knowingly declined such review after having a reasonable opportunity to seek the same.

If any section, subsection, sentence or clause of this Agreement shall be adjudged illegal, invalid or unenforceable, such illegality or unenforceability shall not effect the legality, validity or enforceability of the Agreement as a whole or of any section, subsection, sentence or clause hereof not so adjudged. This Agreement shall be governed by the laws of the Commonwealth of Massachusetts.

Section 19. Fiduciary Responsibility

Client confirms that neither Company nor any of Company's subconsultants or subcontractors has offered any fiduciary service to Client and no fiduciary responsibility shall be owned to Client by Company or any of Company's subconsultants or subcontractors, as a consequence of Company's entering into this Agreement with Client.

Section 20. Use of Licensed Site Professionals

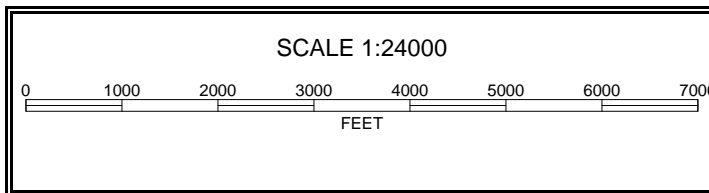
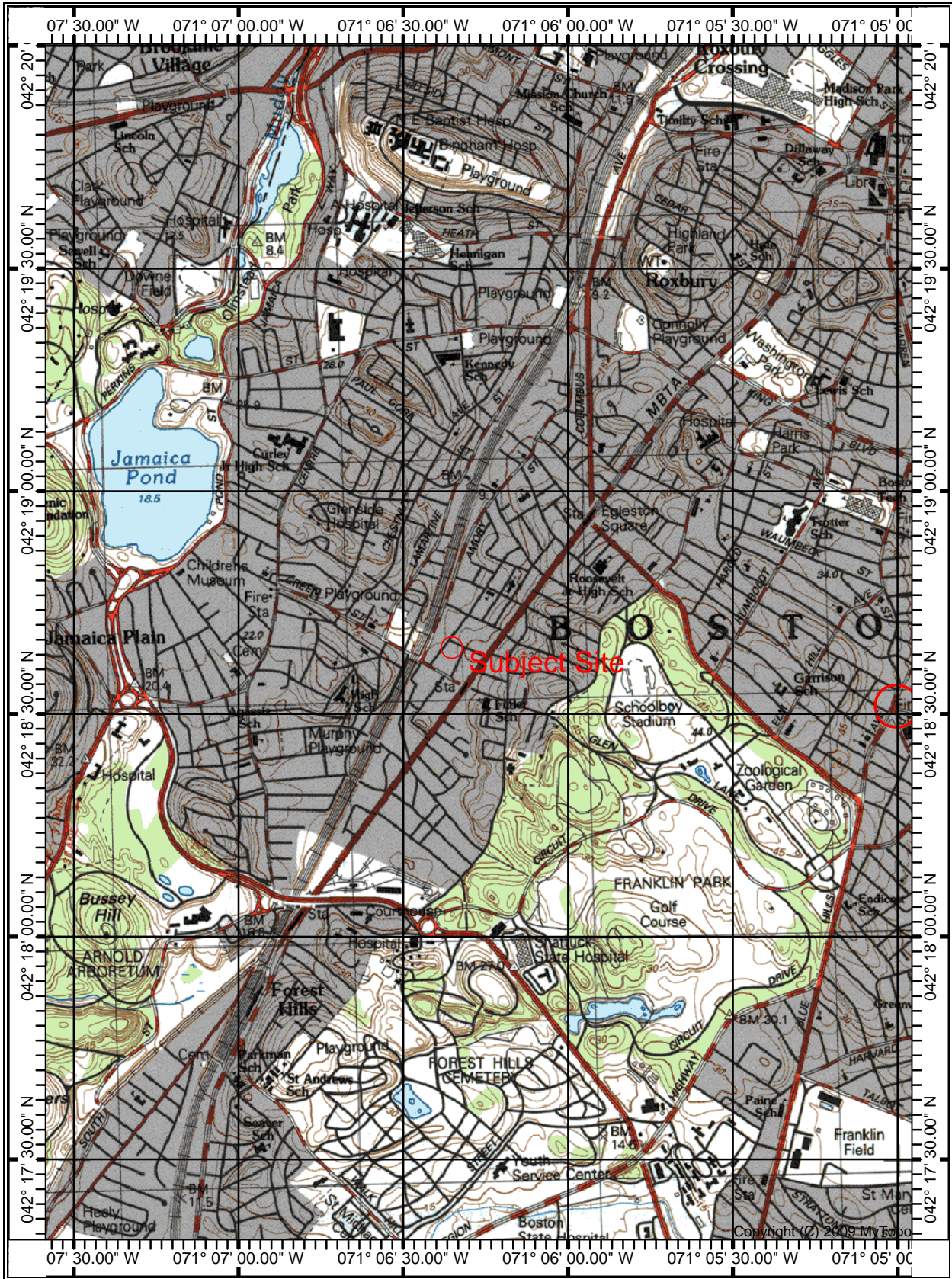
In accordance with Massachusetts General Laws Chapter 21E, the performance of the Services contained in this Agreement may require the engagement of a Licensed Site Professional ("LSP") registered with the Commonwealth of Massachusetts under Massachusetts General Laws Chapter 21A and the regulations promulgated by the Massachusetts Department of Environmental Protection ("DEP") thereunder (collectively the "LSP Program"). Accordingly, Client recognizes and agrees to the following:

- (i) The LSP Program places upon the LSP certain professional obligations owed to the public, including, in some instances, a duty to disclose and report the existence of certain environmental contaminants to the DEP. In the event the LSP's obligations under the LSP Program conflict with the interests of the Client, the Client accepts that the LSP is bound by law to comply with the requirements of the LSP Program.
- (ii) The Client recognizes that the LSP shall be immune from all civil liability resulting from any alleged conflict between the interests of the Client and the investigatory, reporting, and disclosure requirements placed upon the LSP pursuant to 310 CMR 40.0000 and the rules promulgated thereunder.
- (iii) Under the LSP Program, the LSP is required to provide professional opinions ("Opinions") at various stages of an environmental assessment/remediation project. The LSP shall be entitled to request performance of any additional investigations, tests, or other services which, in the LSP's professional judgment, are necessary to permit the LSP to render Opinions required under the LSP Program.
- (iv) At all times, the LSP shall exercise independent professional judgment in the rendering of Opinions and requests for additional investigations, tests, or other services which, in the LSP's professional judgment, are necessary to permit the LSP to render Opinions.
- (v) As part of the LSP Program, the DEP may randomly audit the services performed by the LSP. The Client recognizes that such an audit is part of the regulatory process imposed by the LSP Program, and is in no way associated with, or the result of, any act of the LSP or Company. The Client agrees that any services requested of the LSP or Company in connection with any regulatory audit shall

be additional services, and Company shall be compensated at then existing rates or as otherwise agreed by Client and Company.

(vi) Notwithstanding the provisions of the LSP Program, any Opinions rendered pursuant to this Agreement are for the sole and exclusive use of Client, and are not intended for the use of or reliance upon by any third parties without the prior written approval of Company. Accordingly, Client agrees to indemnify, hold harmless, and defend Company, and the LSP individually, to the fullest extent permitted by law for any claims, losses, or damages allegedly suffered by third parties due to Client's unauthorized release or publication of any Opinion provided hereunder.

Figure 1 - Historic Topographic Map





<p>FSL Associates, Inc. 358 Chestnut Hill Avenue Boston, MA 02135</p> <p>Figure 2a: Site Plan With Boring and Monitoring Well Locations</p>	<p>○ Soil Boring & Monitoring Well</p> <p>● Soil Boring</p>	<p>— Subject Property Boundary</p> <p>□ Approx. Location of Fmr. Septic Tank.</p>
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NOTES:

I CERTIFY THAT THIS PLAN WAS MADE FROM AN INSTRUMENT SURVEY ON THE GROUND ON THE DATE OF SEPTEMBER 9, 2015 AND ALL STRUCTURES ARE LOCATED AS SHOWN HEREON.

ABUTTERS' NAMES REFER TO CURRENT CITY OF BOSTON ASSESSOR'S RECORDS

THE ELEVATIONS SHOWN ON THIS PLAN ARE RELATIVE TO THE CITY OF BOSTON VERTICAL DATUM AND WERE DETERMINED FROM A GPS OBSERVATION MADE ON SEPTEMBER 9, 2015, AND CONVERTED TO BOSTON CITY BASE

BENCHMARK
 1) MAG NAIL SET IN UTILITY POLE: ELEVATION = 35.92'
 2) MAG NAIL SET IN UTILITY POLE: ELEVATION = 36.43'

UNDERGROUND UTILITIES ARE BASED UPON AN ACTUAL FIELD SURVEY AND INFORMATION OF RECORD. IT IS NOT WARRANTED THAT THEY ARE EXACTLY LOCATED, NOR THAT ALL UNDERGROUND CONDUITS OR OTHER STRUCTURES ARE SHOWN ON THIS PLAN. THE DIG-SAFE CALL CENTER SHALL BE CONTACTED PRIOR TO ANY EXCAVATION.

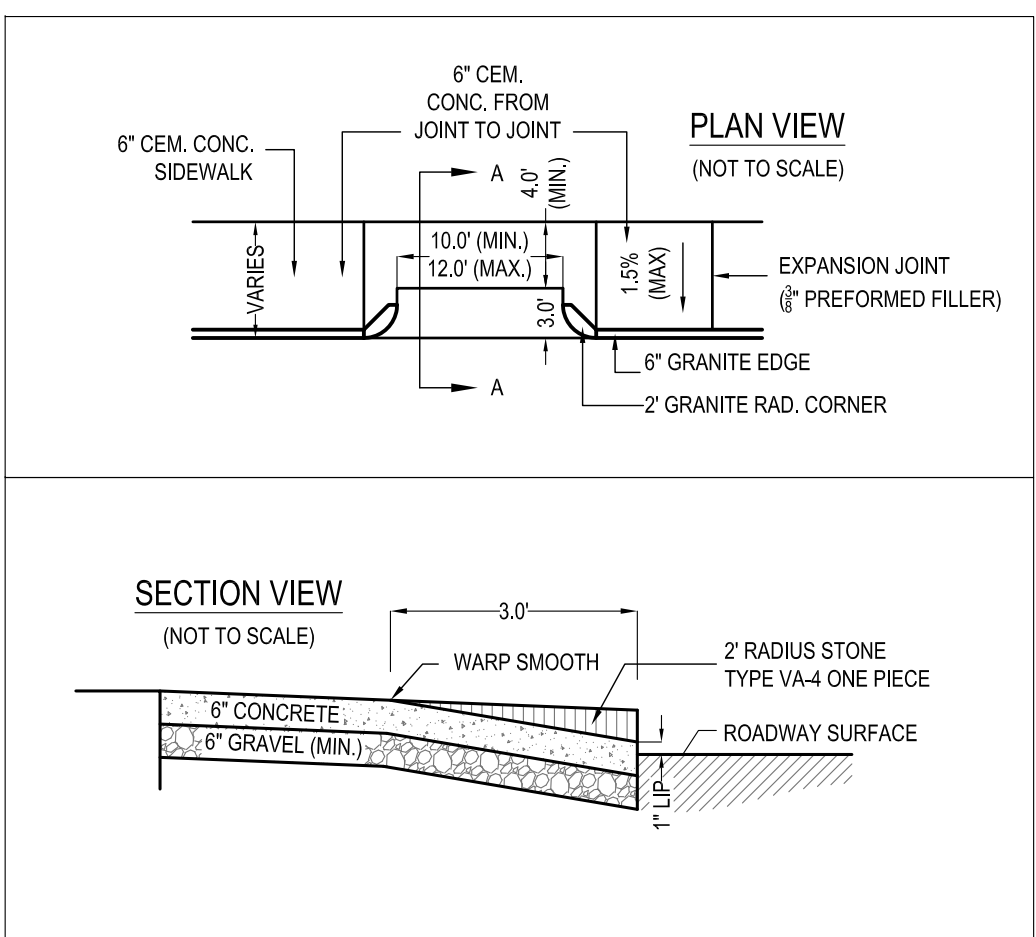
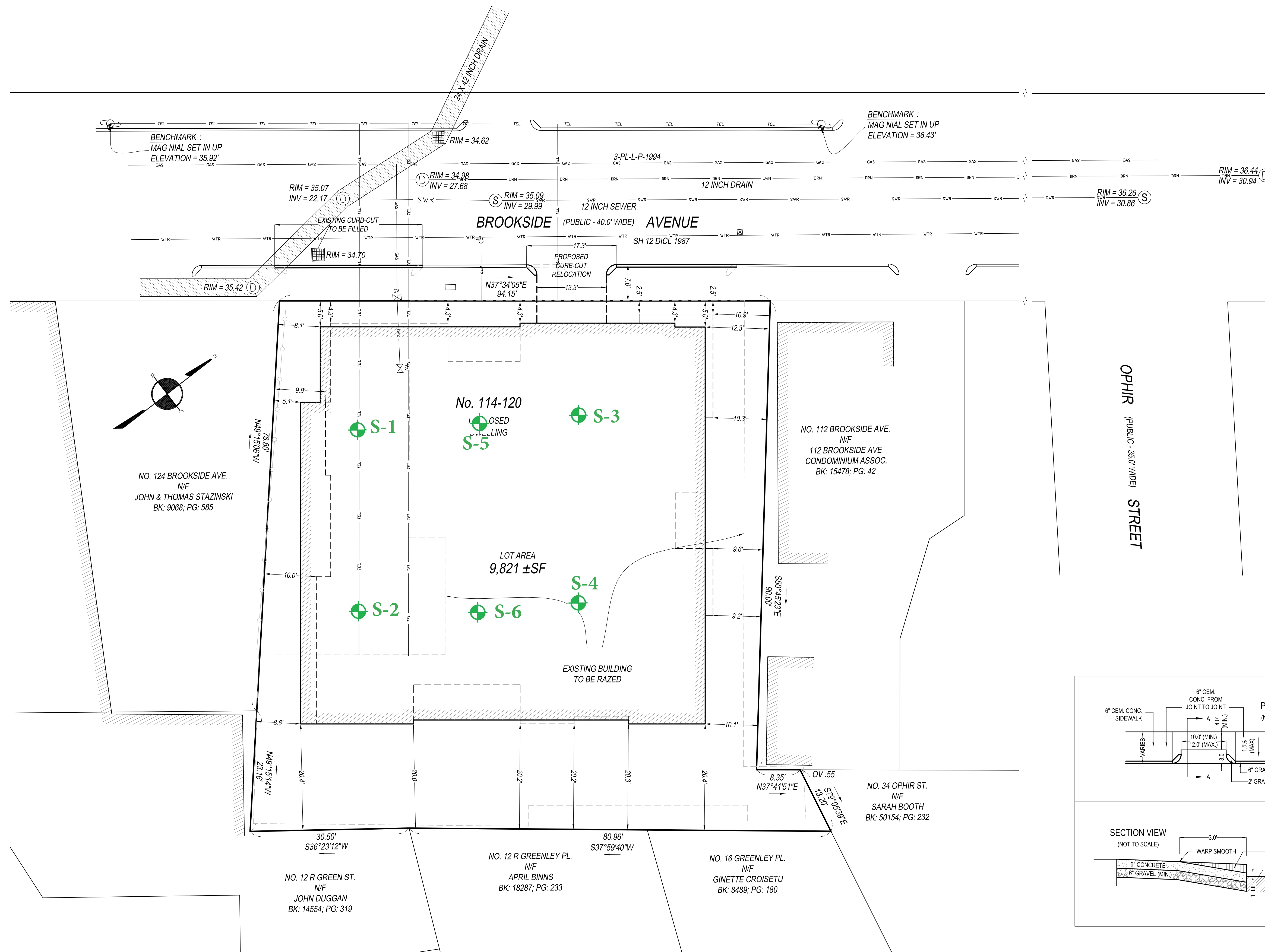
ALL LAND SHOWN LIES WITHIN ZONE "X" UNSHADED, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AS INDICATED ON PANEL 086G OF THE FLOOD INSURANCE RATE MAP BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY FOR THE CITY OF BOSTON, COMMUNITY No. 25025C, HAVING AN EFFECTIVE DATE OF SEPTEMBER 25, 2009.

THE LOT LINES SHOWN HEREON WERE DETERMINED FROM PLANS OF RECORD FILED AT THE SUFFOLK COUNTY REGISTRY OF DEEDS, AND OR THE RECORDS SECTION OF THE CITY OF BOSTON DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION.

LEGEND:

- ⊗ BWSC HANDHOLE
- CATCH BASIN
- ⊙ DRAIN MANHOLE
- ⊙ ELECTRIC MANHOLE
- ⊙ ELECTRIC HANDHOLE
- ⊙ GAS GATE
- ⊙ HYDRANT
- ⊙ LIGHT POLE
- ⊙ SEWER MANHOLE
- ⊙ UTILITY POLE
- ⊙ WATER GATE
- RIM RIM ELEVATION
- INV INVERT ELEVATION

NOTES:
 PARCEL ID: 1102276010
 DATUM: BOSTON CITY BASE
 ZONING: JAMAICA PLAIN NEIGHBORHOOD
 SUBDISTRICT: LC3F-5000
 SUBDISTRICT TYPE: THREE FAMILY RESIDENTIAL
 OVERLAYS: NEIGHBORHOOD DESIGN
 MAP NO.: 9A-9C
 ARTICLE: 55



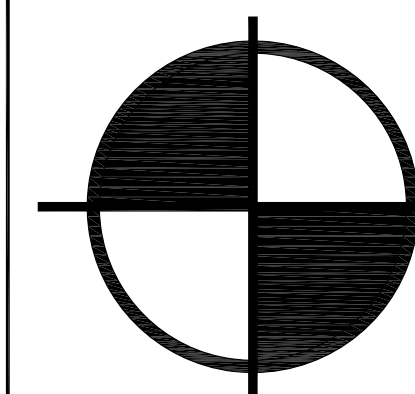
DRAFTSMAN: JJH	REVIEWED BY: GCC
SITE PLAN	9/21/15
PROPOSED CONDITIONS #2	04/28/17

REFERENCES:

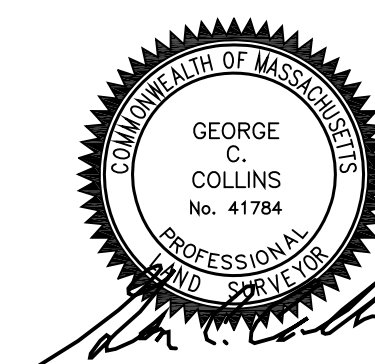
DEED: BK 43225; PG 167
 PLAN: BK 6604; PG 412
 BK 6235; PG 125
 BK 24802; PG 289-291
 BOSTON CITY ENGINEERS F.B. # 645 ; PGS.36-37

SITE PLAN
 LOCATED AT
114-120 BROOKSIDE AVENUE
 JAMAICA PLAIN, MA

PREPARED FOR:
 BROOKSIDE GREEN LLC

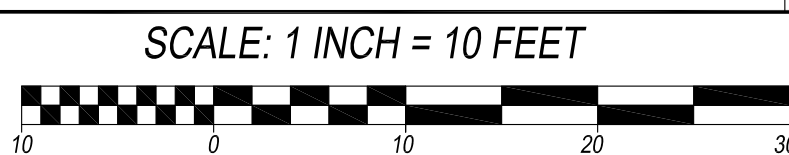


BOSTON SURVEY, INC.
 UNIT C-4 SHIPWAYS PLACE
 CHARLESTOWN, MA. 02129
 (617) 242-1313
 www.bostonsurveyinc.com



JOB # 15-00512

FILE # 15-00512 - SITE PLAN - R2.DWG



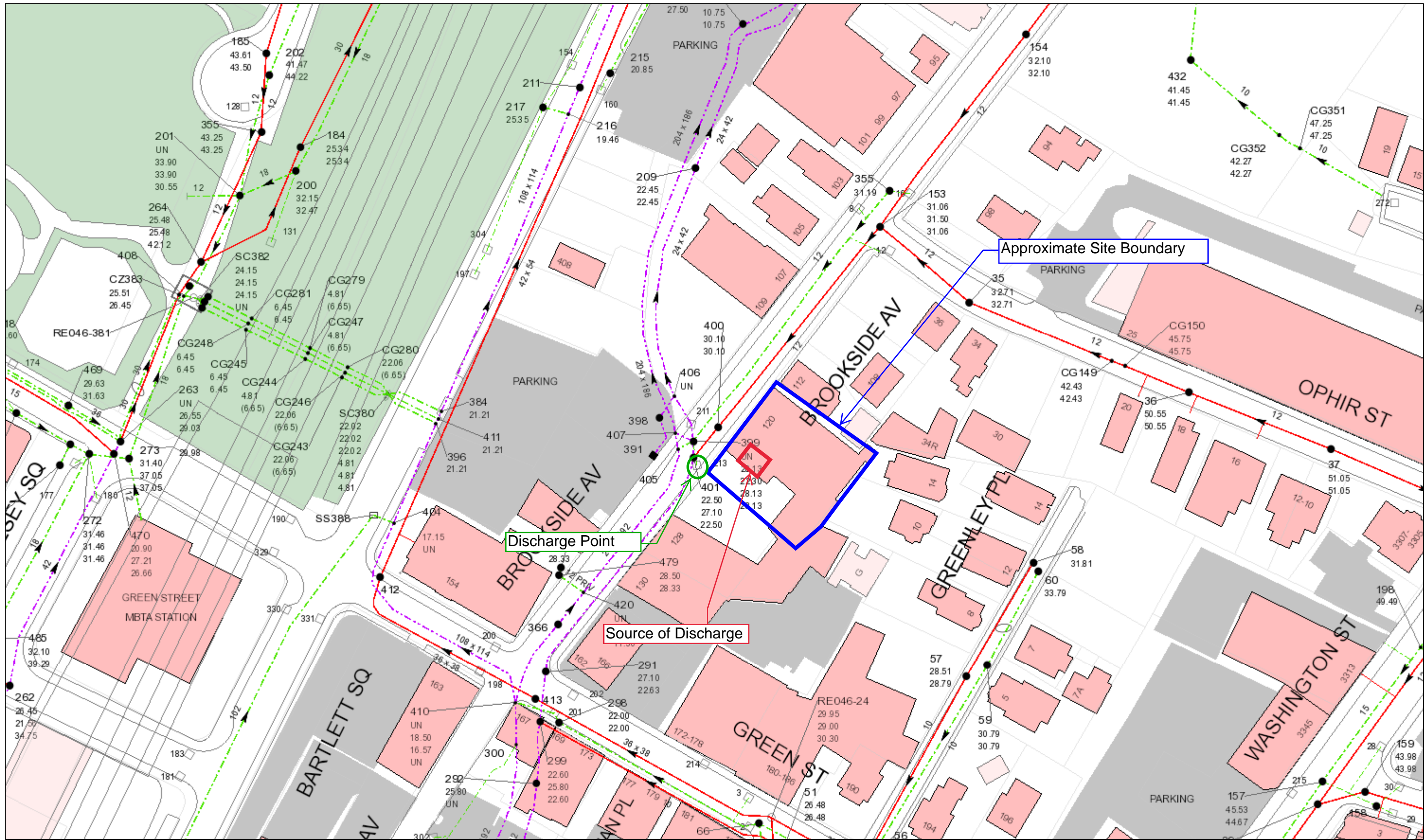


Figure 3 - 114-120 Brookside Ave Discharge Point

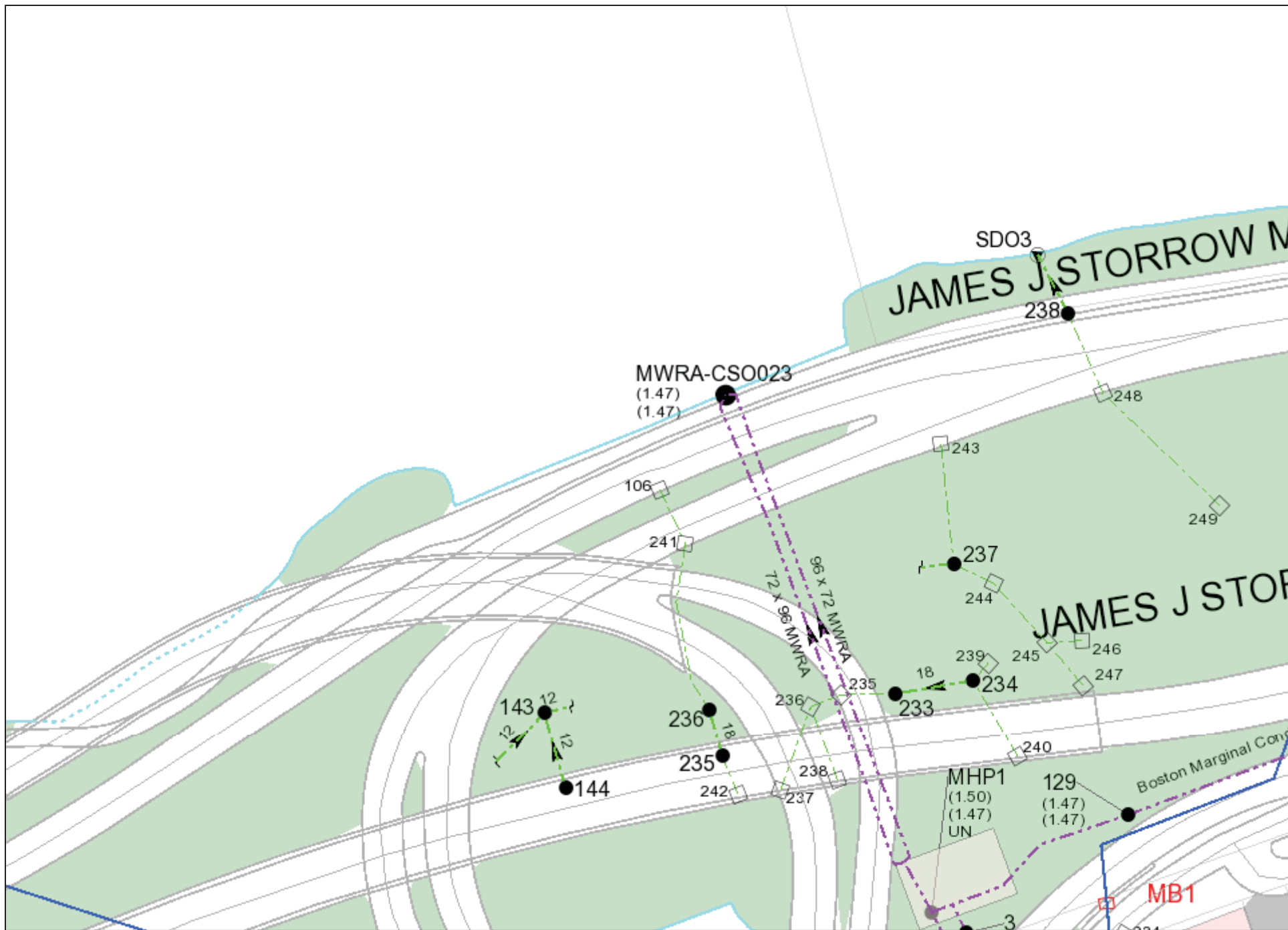
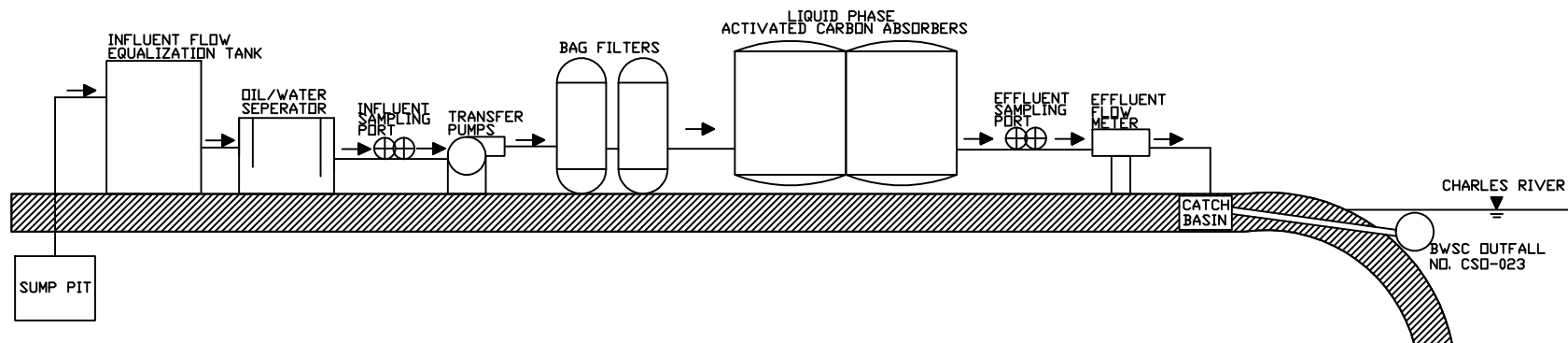


Figure 4 - CS0-023 Outfall

FIGURE 5
DEWATERING TREATMENT
SYSTEM SCHEMATIC

114-120 BROOKSIDE AVE
BOSTON, MA 02130



358 CHESTNUT HILL AVENUE
BOSTON MASS 02135
(617) 233-0001

SCALE:	NTS
DRAWN:	AP
CHK'D:	JC
DATE:	9/26/18

APPENDIX A – NOTICE OF INTENT AND BWSC DEWATERING DISCHARGE PERMIT APPLICATION

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

A. General site information:

1. Name of site:	Site address:		
	Street:		
	City:	State:	Zip:
2. Site owner Owner is (check one): <input type="checkbox"/> Federal <input type="checkbox"/> State/Tribal <input type="checkbox"/> Private <input type="checkbox"/> Other; if so, specify:	Contact Person:		
	Telephone:	Email:	
	Mailing address:		
	Street:		
	City:	State:	Zip:
3. Site operator, if different than owner	Contact Person:		
	Telephone:	Email:	
	Mailing address:		
	Street:		
	City:	State:	Zip:
4. NPDES permit number assigned by EPA: NPDES permit is (check all that apply): <input type="checkbox"/> RGP <input type="checkbox"/> DGP <input type="checkbox"/> CGP <input type="checkbox"/> MSGP <input type="checkbox"/> Individual NPDES permit <input type="checkbox"/> Other; if so, specify:	5. Other regulatory program(s) that apply to the site (check all that apply):		
	<input type="checkbox"/> MA Chapter 21e; list RTN(s): <input type="checkbox"/> NH Groundwater Management Permit or Groundwater Release Detection Permit:	<input type="checkbox"/> CERCLA <input type="checkbox"/> UIC Program <input type="checkbox"/> POTW Pretreatment <input type="checkbox"/> CWA Section 404	

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
Receiving water is (check any that apply): <input type="checkbox"/> Outstanding Resource Water <input type="checkbox"/> Ocean Sanctuary <input type="checkbox"/> territorial sea <input type="checkbox"/> Wild and Scenic River		
2. Has the operator attached a location map in accordance with the instructions in B, above? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No Are sensitive receptors present near the site? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> 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.		
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.		
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.		
6. Has the operator received confirmation from the appropriate State for the 7Q10 and dilution factor indicated? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, indicate date confirmation received:		
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): <input type="checkbox"/> Yes <input type="checkbox"/> No		

C. Source water information:

1. Source water(s) is (check any that apply):			
<input type="checkbox"/> 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): <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> 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): <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> The receiving water <input type="checkbox"/> A surface water other than the receiving water; if so, indicate waterbody:	<input type="checkbox"/> Potable water; if so, indicate municipality or origin: <input type="checkbox"/> 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): <input type="checkbox"/> Yes <input type="checkbox"/> 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): <input type="checkbox"/> Yes <input type="checkbox"/> No
3. Has the source water been previously chlorinated or otherwise contains residual chlorine? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No	

D. Discharge information

1.The discharge(s) is a(n) (check any that apply): <input type="checkbox"/> Existing discharge <input type="checkbox"/> New discharge <input type="checkbox"/> New source	
Outfall(s):	Outfall location(s): (Latitude, Longitude)
Discharges enter the receiving water(s) via (check any that apply): <input type="checkbox"/> Direct discharge to the receiving water <input type="checkbox"/> Indirect discharge, if so, specify: <input type="checkbox"/> A private storm sewer system <input type="checkbox"/> 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): <input type="checkbox"/> Yes <input type="checkbox"/> No Has the operator has received permission from the owner to use such system for discharges? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> 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): <input type="checkbox"/> Yes <input type="checkbox"/> No	
Provide the expected start and end dates of discharge(s) (month/year):	
Indicate if the discharge is expected to occur over a duration of: <input type="checkbox"/> less than 12 months <input type="checkbox"/> 12 months or more <input type="checkbox"/> is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No	

2. Activity Category: (check all that apply)	3. Contamination Type Category: (check all that apply)	
<input type="checkbox"/> I – Petroleum-Related Site Remediation <input type="checkbox"/> II – Non-Petroleum-Related Site Remediation <input type="checkbox"/> III – Contaminated Site Dewatering <input type="checkbox"/> IV – Dewatering of Pipelines and Tanks <input type="checkbox"/> V – Aquifer Pump Testing <input type="checkbox"/> VI – Well Development/Rehabilitation <input type="checkbox"/> VII – Collection Structure Dewatering/Remediation <input type="checkbox"/> VIII – Dredge-Related Dewatering	<p style="text-align: center;">a. If Activity Category I or II: (check all that apply)</p> <input type="checkbox"/> A. Inorganics <input type="checkbox"/> B. Non-Halogenated Volatile Organic Compounds <input type="checkbox"/> C. Halogenated Volatile Organic Compounds <input type="checkbox"/> D. Non-Halogenated Semi-Volatile Organic Compounds <input type="checkbox"/> E. Halogenated Semi-Volatile Organic Compounds <input type="checkbox"/> F. Fuels Parameters	
	<p style="text-align: center;">b. If Activity Category III, IV, V, VI, VII or VIII: (check either G or H)</p>	
	<input type="checkbox"/> G. Sites with Known Contamination	<input type="checkbox"/> H. Sites with Unknown Contamination
	<p>c. If Category III-G, IV-G, V-G, VI-G, VII-G or VIII-G: (check all that apply)</p> <input type="checkbox"/> A. Inorganics <input type="checkbox"/> B. Non-Halogenated Volatile Organic Compounds <input type="checkbox"/> C. Halogenated Volatile Organic Compounds <input type="checkbox"/> D. Non-Halogenated Semi-Volatile Organic Compounds <input type="checkbox"/> E. Halogenated Semi-Volatile Organic Compounds <input type="checkbox"/> F. Fuels Parameters	<p>d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply</p>

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								Report mg/L	---
Chloride								Report µg/l	---
Total Residual Chlorine								0.2 mg/L	
Total Suspended Solids								30 mg/L	---
Antimony								206 µg/L	
Arsenic								104 µg/L	
Cadmium								10.2 µg/L	
Chromium III								323 µg/L	
Chromium VI								323 µg/L	
Copper								242 µg/L	
Iron								5,000 µg/L	
Lead								160 µg/L	
Mercury								0.739 µg/L	
Nickel								1,450 µg/L	
Selenium								235.8 µg/L	
Silver								35.1 µg/L	
Zinc								420 µg/L	
Cyanide								178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX								100 µg/L	---
Benzene								5.0 µg/L	---
1,4 Dioxane								200 µg/L	---
Acetone								7.97 mg/L	---
Phenol								1,080 µg/L	

E. Treatment system information

<p>1. Indicate the type(s) of treatment that will be applied to effluent prior to discharge: (check all that apply)</p> <p><input type="checkbox"/> Adsorption/Absorption <input type="checkbox"/> Advanced Oxidation Processes <input type="checkbox"/> Air Stripping <input type="checkbox"/> Granulated Activated Carbon (“GAC”)/Liquid Phase Carbon Adsorption</p> <p><input type="checkbox"/> Ion Exchange <input type="checkbox"/> Precipitation/Coagulation/Flocculation <input type="checkbox"/> Separation/Filtration <input type="checkbox"/> Other; if so, specify:</p>	
<p>2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge.</p> <p>Identify each major treatment component (check any that apply):</p> <p><input type="checkbox"/> Fractionation tanks <input type="checkbox"/> Equalization tank <input type="checkbox"/> Oil/water separator <input type="checkbox"/> Mechanical filter <input type="checkbox"/> Media filter</p> <p><input type="checkbox"/> Chemical feed tank <input type="checkbox"/> Air stripping unit <input type="checkbox"/> Bag filter <input type="checkbox"/> Other; if so, specify:</p> <p>Indicate if either of the following will occur (check any that apply):</p> <p><input type="checkbox"/> Chlorination <input type="checkbox"/> De-chlorination</p>	
<p>3. Provide the design flow capacity in gallons per minute (gpm) of the most limiting component.</p> <p>Indicate the most limiting component:</p> <p>Is use of a flow meter feasible? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No, if so, provide justification:</p>	
<p>Provide the proposed maximum effluent flow in gpm.</p>	
<p>Provide the average effluent flow in gpm.</p>	
<p>If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:</p>	
<p>4. Has the operator attached a schematic of flow in accordance with the instructions in E, above? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	

F. Chemical and additive information

<p>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)</p> <p><input type="checkbox"/> Algaecides/biocides <input type="checkbox"/> Antifoams <input type="checkbox"/> Coagulants <input type="checkbox"/> Corrosion/scale inhibitors <input type="checkbox"/> Disinfectants <input type="checkbox"/> Flocculants <input type="checkbox"/> Neutralizing agents <input type="checkbox"/> Oxidants <input type="checkbox"/> Oxygen <input type="checkbox"/> scavengers <input type="checkbox"/> pH conditioners <input type="checkbox"/> Bioremedial agents, including microbes <input type="checkbox"/> Chlorine or chemicals containing chlorine <input type="checkbox"/> Other; if so, specify:</p>
<p>2. Provide the following information for each chemical/additive, using attachments, if necessary:</p> <p>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)).</p>
<p>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): <input type="checkbox"/> Yes <input type="checkbox"/> 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): <input type="checkbox"/> Yes <input type="checkbox"/> No</p>

G. Endangered Species Act eligibility determination

<p>1. Indicate under which criterion the discharge(s) is eligible for coverage under this general permit:</p> <p><input type="checkbox"/> 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".</p> <p><input type="checkbox"/> 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): <input type="checkbox"/> Yes <input type="checkbox"/> No; if no, is consultation underway? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> 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) <input type="checkbox"/> the operator <input type="checkbox"/> EPA <input type="checkbox"/> Other; if so, specify:</p>

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.

A BMPP has been prepared in accordance with Section 2.5 of the Remediation General Permit. The BMPP certification statement: **BMPP is to be implemented at the start of discharge activities.**

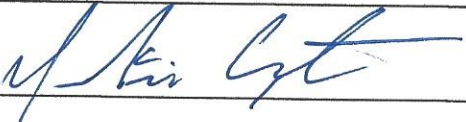
Notification provided to the appropriate State, including a copy of this NOI, if required. Check one: Yes No

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: 

Date: 9/5/2018

Print Name and Title: **Mackenzie Carpenter, Vice President**



**Boston Water and
Sewer Commission**
980 Harrison Avenue
Boston, MA 02119-2540

DEWATERING DISCHARGE PERMIT APPLICATION

OWNER / AUTHORIZED APPLICANT PROVIDE INFORMATION HERE:

Company Name: Z.Reid Enterprises Address: 180 Belmont Street, Brockton, MA 02301

Phone Number: (508) 313-6669 Fax number: _____

Contact person name: Mackenzie Carpenter Title: Vice President

Cell number: (508) 313-6669 Email address: mcarpenter@zreid.com

Permit Request (check one): New Application Permit Extension Other (Specify): _____

Owner's Information (if different from above):

Owner of property being dewatered: Brookside Green LLC

Owner's mailing address: 840 Summer Street, #305B, Boston, MA 02127 Phone number: (617) 777-5460

Location of Discharge & Proposed Treatment System(s):

Street number and name: 114-120 Brookside Avenue Neighborhood Jamaica Plain (Roxbury)

Discharge is to a: Sanitary Sewer Combined Sewer Storm Drain Other (specify): _____

Describe Proposed Pre-Treatment System(s): effluent flow meter. If necessary: cartridge filtration, ion exchange resin media and coagulation/flocculation/clarification, and addition of sodium hydroxide solution to adjust pH

BWSC Outfall No. CSO-023 Receiving Waters Charles River

Temporary Discharges (Provide Anticipated Dates of Discharge): From October 2018 To September 2019

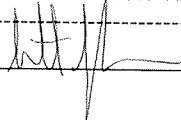
- | | | |
|--|--|---|
| <input type="checkbox"/> Groundwater Remediation | <input type="checkbox"/> Tank Removal/Installation | <input checked="" type="checkbox"/> Foundation Excavation |
| <input type="checkbox"/> Utility/Manhole Pumping | <input type="checkbox"/> Test Pipe | <input type="checkbox"/> Trench Excavation |
| <input type="checkbox"/> Accumulated Surface Water | <input type="checkbox"/> Hydrogeologic Testing | <input type="checkbox"/> Other _____ |

Permanent Discharges

- | | |
|---|---|
| <input type="checkbox"/> Foundation Drainage | <input type="checkbox"/> Crawl Space/Footing Drain |
| <input type="checkbox"/> Accumulated Surface Water | <input type="checkbox"/> Non-contact/Uncontaminated Cooling |
| <input type="checkbox"/> Non-contact/Uncontaminated Process | <input type="checkbox"/> Other: _____ |

1. Attach a Site Plan showing the source of the discharge and the location of the point of discharge (i.e. the sewer pipe or catch basin). Include meter type, meter number, size, make and start reading. Note. All discharges to the Commission's sewer system will be assessed current sewer charges.
2. If discharging to a sanitary or combined sewer, attach a copy of MWRA's Sewer Use Discharge permit or application.
3. If discharging to a separate storm drain, attach a copy of EPA's NPDES Permit or NOI application, or NPDES Permit exclusion letter for the discharge, as well as other relevant information.
4. Dewatering Drainage Permit will be denied or revoked if applicant fails to obtain the necessary permits from MWRA or EPA.

Submit Completed Application to: Boston Water and Sewer Commission
Engineering Customer Services
980 Harrison Avenue, Boston, MA 02119
Attn: Matthew Tuttle, Engineering Customer Service
E-mail: tuttlemp@bwsc.org
Phone: 617-989-7204 Fax: 617-989-7716

Signature of Authorized Representative for Property Owner: 

Date: 9/7/18

APPENDIX B – NOTICE OF INTENT SUPPORTING DOCUMENTATION

MassDEP - Bureau of Waste Site Cleanup

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

Site Information:

120 BROOKSIDE AVE BOSTON, MA

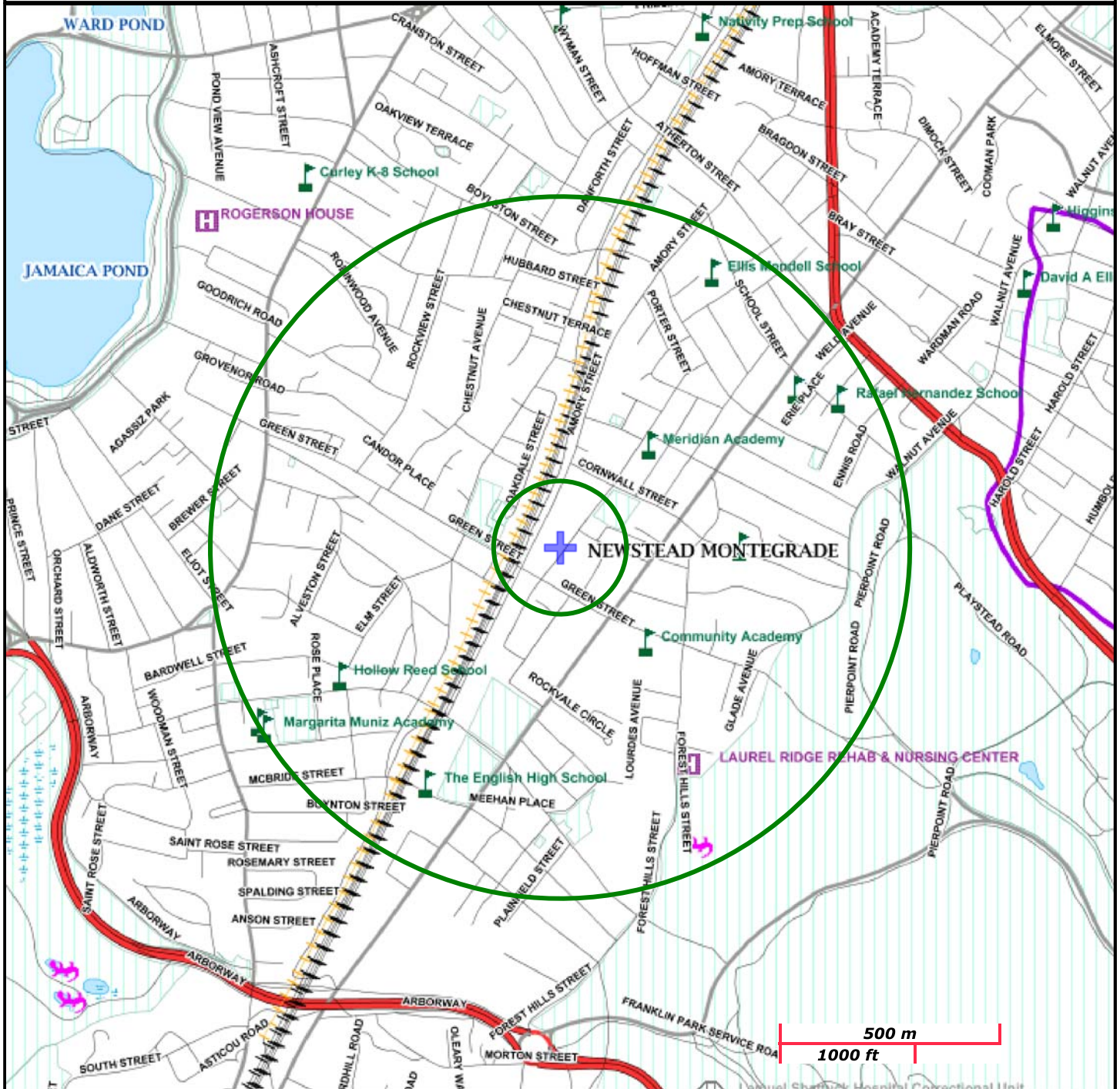
NAD83 UTM Meters:
4686441mN, 326441mE (Zone: 19)
September 27, 2018

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



MassDEP

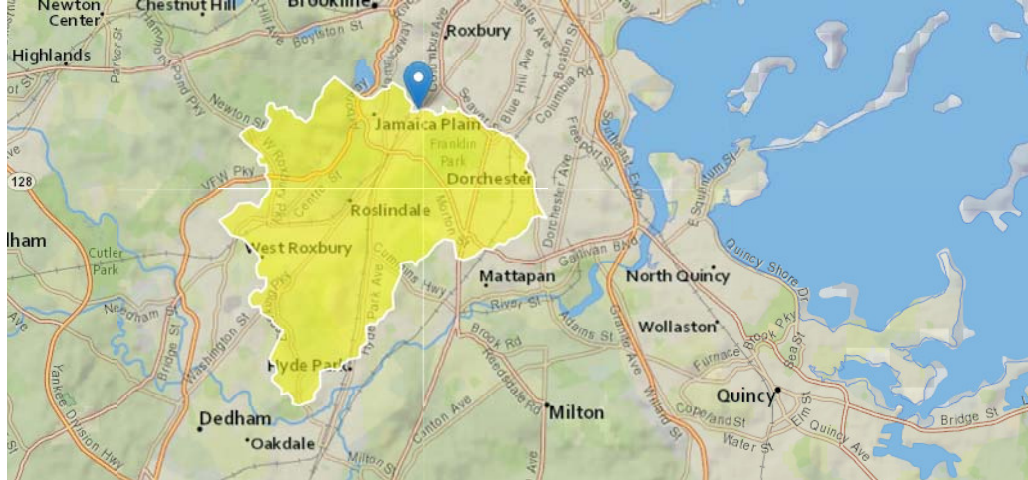
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail	PWS Protection Areas: Zone II, IWPA, Zone A		
Boundaries: Town, County, DEP Region; Train, Powerline; Pipeline; Aqueduct	Hydrography: Open Water, PWS Reservoir, Tidal Flat		
Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam	Wetlands: Freshwater, Saltwater, Cranberry Bog		
Aquifers: Medium Yield, High Yield, EPA Sole Source	FEMA 100yr Floodplain; Protected Open Space; ACEC		
Non Potential Drinking Water Source Area: Medium, High (Yield)	Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential		
	Solid Waste Landfill; PWS: Com. GW, SW, Emerg., Non-Com.		

StreamStats Report - 114-120 Brookside Ave

Region ID: MA
Workspace ID: MA20180924165028515000
Clicked Point (Latitude, Longitude): 42.31039, -71.10521
Time: 2018-09-24 12:50:42 -0400



Basin Characteristics				
Parameter Code	Parameter Description	Value	Unit	
DRNAREA	Area that drains to a point on a stream	11.6	square miles	
ELEV	Mean Basin Elevation	113	feet	
LC06STOR	Percentage of water bodies and wetlands determined from the NLCD 2006	0.95	percent	
BSLDEM250	Mean basin slope computed from 1:250K DEM	2.689	percent	
DRFTPERSTR	Area of stratified drift per unit of stream length	-100000	square mile per mile	
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless	
BSLDEM10M	Mean basin slope computed from 10 m DEM	6.528	percent	

Peak-Flow Statistics Parameters <small>[Peak Statewide 2016 5156]</small>						
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit	
DRNAREA	Drainage Area	11.6	square miles	0.16	512	
ELEV	Mean Basin Elevation	113	feet	80.6	1948	
LC06STOR	Percent Storage from NLCD2006	0.95	percent	0	32.3	

Peak-Flow Statistics Flow Report <small>[Peak Statewide 2016 5156]</small>						
PII: Prediction Interval-Lower, PIU: Prediction Interval-Upper, SEP: Standard Error of Prediction, SE: Standard Error (other -- see report)						
Statistic	Value	Unit	PII	PIU	SEP	
2 Year Peak Flood	311	ft ³ /s	158	612	42.3	
5 Year Peak Flood	504	ft ³ /s	253	1000	43.4	
10 Year Peak Flood	652	ft ³ /s	319	1330	44.7	
25 Year Peak Flood	866	ft ³ /s	410	1830	47.1	
50 Year Peak Flood	1040	ft ³ /s	478	2270	49.4	
100 Year Peak Flood	1230	ft ³ /s	545	2760	51.8	
200 Year Peak Flood	1430	ft ³ /s	617	3320	54.1	

Enter number values in green boxes below

Enter values in the units specified

↓	
0	Q _R = Enter upstream flow in MGD
0.144	Q _P = Enter discharge flow in MGD
18.9	Downstream 7Q10

Enter a dilution factor, if other than zero

↓	
132	

Enter values in the units specified

↓	
353	C _d = Enter influent hardness in mg/L CaCO₃
0	C _s = Enter receiving water hardness in mg/L CaCO₃

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

↓	
7.6	pH in Standard Units
26	Temperature in °C
0	Ammonia in mg/L
0	Hardness in mg/L CaCO₃
29	Salinity in ppt
0	Antimony in µg/L
1.01	Arsenic in µg/L
0	Cadmium in µg/L
0	Chromium III in µg/L
0	Chromium VI in µg/L
3.97	Copper in µg/L
906	Iron in µg/L
5.21	Lead in µg/L
0	Mercury in µg/L
0	Nickel in µg/L
0	Selenium in µg/L
0	Silver in µg/L
12.48	Zinc in µg/L

Enter **influent** concentrations in the units specified

↓	
0	TRC in µg/L
0	Ammonia in mg/L
0	Antimony in µg/L
1.52	Arsenic in µg/L
0.3	Cadmium in µg/L
0	Chromium III in µg/L
0	Chromium VI in µg/L
17.4	Copper in µg/L
3,540	Iron in µg/L
78.6	Lead in µg/L
0	Mercury in µg/L
6.52	Nickel in µg/L
5.26	Selenium in µg/L
0	Silver in µg/L
22.7	Zinc in µg/L
0	Cyanide in µg/L
0	Phenol in µg/L
0	Carbon Tetrachloride in µg/L
0	Tetrachloroethylene in µg/L
0	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

Notes:

Freshwater: Q_R equal to the 7Q10; enter alternate Q_R if approved by the State; enter 0 if no dilution factor approved

Saltwater (estuarine and marine): enter Q_R if approved by the State; enter 0 if no entry

Discharge flow is equal to the design flow or 1 MGD, whichever is less

Only if approved by State as the entry for Q_R; leave 0 if no entry

Saltwater (estuarine and marine): only if approved by the State

Leave 0 if no entry

Freshwater only

pH, temperature, and ammonia required for all discharges

Hardness required for freshwater

Salinity required for saltwater (estuarine and marine)

Metals required for all discharges if present and if dilution factor is > 1

Enter 0 if non-detect or testing not required

if >1 sample, enter maximum

if >10 samples, may enter 95th percentile

Enter 0 if non-detect or testing not required

Dilution Factor	1.0					
	TBEL applies if bolded		WQBEL applies if bolded		Compliance Level applies if shown	
A. Inorganics						
Ammonia	Report	mg/L	---			
Chloride	Report	µg/L	---			
Total Residual Chlorine	0.2	mg/L	1444	µg/L	---	µg/L
Total Suspended Solids	30	mg/L	---			
Antimony	206	µg/L	84000	µg/L		
Arsenic	104	µg/L	1313	µg/L		
Cadmium	10.2	µg/L	2.4379	µg/L		
Chromium III	323	µg/L	585.3	µg/L		
Chromium VI	323	µg/L	1500.8	µg/L		
Copper	242	µg/L	55.7	µg/L		
Iron	5000	µg/L	131250	µg/L		
Lead	160	µg/L	4.19	µg/L		
Mercury	0.739	µg/L	118.90	µg/L		
Nickel	1450	µg/L	321.3	µg/L		
Selenium	235.8	µg/L	656.3	µg/L		
Silver	35.1	µg/L	1.0	µg/L		
Zinc	420	µg/L	734.6	µg/L		
Cyanide	178	mg/L	682.5	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	39375	µg/L		
C. Halogenated VOCs						
Carbon Tetrachloride	4.4	µg/L	210.0	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	433.1	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	288.8	µg/L		
Total Group I Polycyclic Aromatic Hydrocarbons	1.0	µg/L	---			
Benzo(a)anthracene	1.0	µg/L	0.4988	µg/L	---	µg/L
Benzo(a)pyrene	1.0	µg/L	0.4988	µg/L	---	µg/L
Benzo(b)fluoranthene	1.0	µg/L	0.4988	µg/L	---	µg/L
Benzo(k)fluoranthene	1.0	µg/L	0.4988	µg/L	---	µg/L
Chrysene	1.0	µg/L	0.4988	µg/L	---	µg/L
Dibenzo(a,h)anthracene	1.0	µg/L	0.4988	µg/L	---	µg/L
Indeno(1,2,3-cd)pyrene	1.0	µg/L	0.4988	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	2625	µg/L		
tert-Butyl Alcohol	120	µg/L	---			
tert-Amyl Methyl Ether	90	µg/L	---			



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:

September 24, 2018

Consultation Code: 05E1NE00-2018-SLI-3190

Event Code: 05E1NE00-2018-E-07471

Project Name: 114-120 Brookside Avenue

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: 05E1NE00-2018-SLI-3190

Event Code: 05E1NE00-2018-E-07471

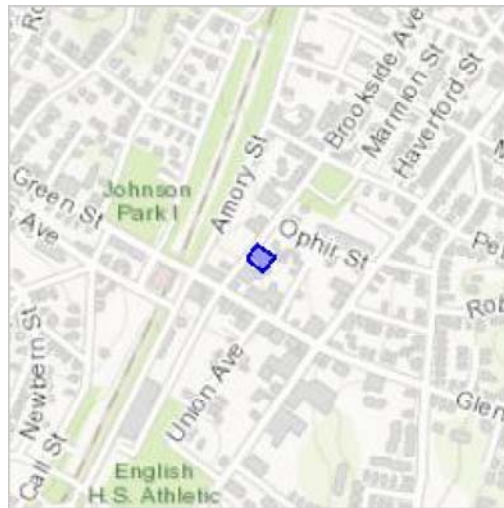
Project Name: 114-120 Brookside Avenue

Project Type: Water Withdrawal / Depletion

Project Description: The proposed development is understood to consist of a building which will occupy the entirety of the 9,820 square foot property parcel. The building will consist of four (4) stories above-grade and a basement underneath. The maximum depth of excavation for the construction of the building foundation will be approximately 16.5 feet below-grade. The excavation for the elevator pit for the proposed building will be advanced to a maximum depth of 15.5 feet below-grade. The elevator pit is to be located towards the eastern corner of the proposed building. The excavation for the elevator pit is scheduled to be the source of the discharge.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/42.31071097546669N71.10566155524123W>



Counties: Suffolk, 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 Fisheries¹, 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.

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Boston; Place: Jamaica Plain; Street No: 120; Street Name: Brookside Ave;

Inv. No.	Property Name	Street	Town	Year
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APPENDIX C – GROUNDWATER AND RECEIVING WATER ANALYTICAL DATA



ANALYTICAL REPORT

Lab Number:	L1833609
Client:	FSL Associates 358 Chestnut Hill Ave. Brighton, MA 02135
ATTN:	Jarod Coumoyer
Phone:	(617) 232-0001
Project Name:	120 BROOKSIDE AVE
Project Number:	120 BROOKSIDE AVE
Report Date:	08/27/18

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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

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



Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1833609-01	DW-1	WATER	120 BROOKSIDE AVE	08/24/18 12:00	08/24/18

Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

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

Please contact Client Services at 800-624-9220 with any questions.

Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

Case Narrative (continued)

TPH, SGT-HEM

The WG1150533-3 MS recovery (60%), performed on L1833609-01, is outside the acceptance criteria; however, the associated LCS recovery is within criteria. No further action was taken.

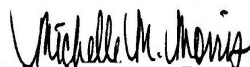
WG1150533: A Laboratory Duplicate could not be performed due to insufficient sample volume available for analysis.

Anions by Ion Chromatography

The WG1150834-3 MS recovery for Chloride (88%), performed on L1833609-01, does not apply because the sample concentration is greater than four times the spike amount added.

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

Authorized Signature:



Michelle M. Morris

Title: Technical Director/Representative

Date: 08/27/18

ORGANICS

VOLATILES

Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

SAMPLE RESULTS

Lab ID: L1833609-01
 Client ID: DW-1
 Sample Location: 120 BROOKSIDE AVE

Date Collected: 08/24/18 12:00
 Date Received: 08/24/18
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 128,624.1
 Analytical Date: 08/25/18 17:12
 Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	1.0	--	1
1,1-Dichloroethane	ND		ug/l	1.5	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.5	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethane	ND		ug/l	1.5	--	1
1,1,1-Trichloroethane	ND		ug/l	2.0	--	1
Benzene	ND		ug/l	1.0	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	5.0	--	1
1,3-Dichlorobenzene	ND		ug/l	5.0	--	1
1,4-Dichlorobenzene	ND		ug/l	5.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
Acetone	ND		ug/l	10	--	1
Methyl tert butyl ether	ND		ug/l	10	--	1
Tert-Butyl Alcohol	ND		ug/l	100	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	20	--	1

Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

SAMPLE RESULTS

Lab ID: L1833609-01
 Client ID: DW-1
 Sample Location: 120 BROOKSIDE AVE

Date Collected: 08/24/18 12:00
 Date Received: 08/24/18
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Volatile Organics by GC/MS - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	96		60-140
Fluorobenzene	99		60-140
4-Bromofluorobenzene	100		60-140

Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

SAMPLE RESULTS

Lab ID: L1833609-01
 Client ID: DW-1
 Sample Location: 120 BROOKSIDE AVE

Date Collected: 08/24/18 12:00
 Date Received: 08/24/18
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 128,624.1-SIM
 Analytical Date: 08/25/18 17:12
 Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM - Westborough Lab						
1,4-Dioxane	ND		ug/l	50	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	105		60-140
4-Bromofluorobenzene	98		60-140

Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

SAMPLE RESULTS

Lab ID: L1833609-01
 Client ID: DW-1
 Sample Location: 120 BROOKSIDE AVE

Date Collected: 08/24/18 12:00
 Date Received: 08/24/18
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 14,504.1
 Analytical Date: 08/27/18 10:51
 Analyst: AWS

Extraction Method: EPA 504.1
 Extraction Date: 08/27/18 09:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	--	1	A
1,2-Dibromo-3-chloropropane	ND		ug/l	0.010	--	1	A

Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

**Method Blank Analysis
Batch Quality Control**

Analytical Method: 128,624.1
Analytical Date: 08/25/18 09:25
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1150743-4					
Methylene chloride	ND		ug/l	1.0	--
1,1-Dichloroethane	ND		ug/l	1.5	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.5	--
Tetrachloroethene	ND		ug/l	1.0	--
1,2-Dichloroethane	ND		ug/l	1.5	--
1,1,1-Trichloroethane	ND		ug/l	2.0	--
Benzene	ND		ug/l	1.0	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--
1,2-Dichlorobenzene	ND		ug/l	5.0	--
1,3-Dichlorobenzene	ND		ug/l	5.0	--
1,4-Dichlorobenzene	ND		ug/l	5.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
Acetone	ND		ug/l	10	--
Methyl tert butyl ether	ND		ug/l	10	--
Tert-Butyl Alcohol	ND		ug/l	100	--
Tertiary-Amyl Methyl Ether	ND		ug/l	20	--

Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 08/25/18 09:25
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1150743-4					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	90		60-140
Fluorobenzene	99		60-140
4-Bromofluorobenzene	94		60-140

Project Name: 120 BROOKSIDE AVE

Lab Number: L1833609

Project Number: 120 BROOKSIDE AVE

Report Date: 08/27/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1-SIM

Analytical Date: 08/25/18 09:25

Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1150748-4					
1,4-Dioxane	ND		ug/l	50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	108		60-140
4-Bromofluorobenzene	94		60-140

Project Name: 120 BROOKSIDE AVE

Lab Number: L1833609

Project Number: 120 BROOKSIDE AVE

Report Date: 08/27/18

**Method Blank Analysis
Batch Quality Control**

Analytical Method: 14,504.1
 Analytical Date: 08/27/18 10:01
 Analyst: AWS

Extraction Method: EPA 504.1
 Extraction Date: 08/27/18 09:37

Parameter	Result	Qualifier	Units	RL	MDL
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG1150888-1					
1,2-Dibromoethane	ND		ug/l	0.010	-- A
1,2-Dibromo-3-chloropropane	ND		ug/l	0.010	-- A

Lab Control Sample Analysis

Batch Quality Control

Project Name: 120 BROOKSIDE AVE

Lab Number: L1833609

Project Number: 120 BROOKSIDE AVE

Report Date: 08/27/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1150743-3								
Methylene chloride	100		-		60-140	-		28
1,1-Dichloroethane	95		-		50-150	-		49
Carbon tetrachloride	105		-		70-130	-		41
1,1,2-Trichloroethane	90		-		70-130	-		45
Tetrachloroethene	95		-		70-130	-		39
1,2-Dichloroethane	105		-		70-130	-		49
1,1,1-Trichloroethane	105		-		70-130	-		36
Benzene	110		-		65-135	-		61
Toluene	105		-		70-130	-		41
Ethylbenzene	105		-		60-140	-		63
Vinyl chloride	115		-		5-195	-		66
1,1-Dichloroethene	95		-		50-150	-		32
cis-1,2-Dichloroethene	95		-		60-140	-		30
Trichloroethene	90		-		65-135	-		48
1,2-Dichlorobenzene	90		-		65-135	-		57
1,3-Dichlorobenzene	85		-		70-130	-		43
1,4-Dichlorobenzene	90		-		65-135	-		57
p/m-Xylene	102		-		60-140	-		30
o-xylene	95		-		60-140	-		30
Acetone	92		-		40-160	-		30
Methyl tert butyl ether	90		-		60-140	-		30
Tert-Butyl Alcohol	78		-		60-140	-		30
Tertiary-Amyl Methyl Ether	95		-		60-140	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 120 BROOKSIDE AVE

Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609

Report Date: 08/27/18

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
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Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1150743-3

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria
Pentafluorobenzene	100				60-140
Fluorobenzene	111				60-140
4-Bromofluorobenzene	94				60-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: 120 BROOKSIDE AVE

Lab Number: L1833609

Project Number: 120 BROOKSIDE AVE

Report Date: 08/27/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1150748-3								
1,4-Dioxane	110		-		60-140	-		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Fluorobenzene	119				60-140
4-Bromofluorobenzene	89				60-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: 120 BROOKSIDE AVE

Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609

Report Date: 08/27/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 Batch: WG1150888-2									
1,2-Dibromoethane	93		-		80-120	-			A
1,2-Dibromo-3-chloropropane	94		-		80-120	-			A

Matrix Spike Analysis

Batch Quality Control

Project Name: 120 BROOKSIDE AVE

Lab Number: L1833609

Project Number: 120 BROOKSIDE AVE

Report Date: 08/27/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1150888-3 QC Sample: L1833609-01 Client ID: DW-1													
1,2-Dibromoethane	ND	0.252	0.262	104		-	-		80-120	-		20	A
1,2-Dibromo-3-chloropropane	ND	0.252	0.246	97		-	-		80-120	-		20	A

SEMIVOLATILES

Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

SAMPLE RESULTS

Lab ID: L1833609-01
 Client ID: DW-1
 Sample Location: 120 BROOKSIDE AVE

Date Collected: 08/24/18 12:00
 Date Received: 08/24/18
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 129,625.1
 Analytical Date: 08/26/18 08:09
 Analyst: SZ

Extraction Method: EPA 625.1
 Extraction Date: 08/25/18 01:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-ethylhexyl)phthalate	ND		ug/l	2.2	--	1
Butyl benzyl phthalate	ND		ug/l	5.0	--	1
Di-n-butylphthalate	ND		ug/l	5.0	--	1
Di-n-octylphthalate	ND		ug/l	5.0	--	1
Diethyl phthalate	ND		ug/l	5.0	--	1
Dimethyl phthalate	ND		ug/l	5.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	83		42-122
2-Fluorobiphenyl	74		46-121
4-Terphenyl-d14	80		47-138

Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

SAMPLE RESULTS

Lab ID: L1833609-01
 Client ID: DW-1
 Sample Location: 120 BROOKSIDE AVE

Date Collected: 08/24/18 12:00
 Date Received: 08/24/18
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 129,625.1-SIM
 Analytical Date: 08/27/18 15:36
 Analyst: DV

Extraction Method: EPA 625.1
 Extraction Date: 08/25/18 01:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	--	1
Fluoranthene	ND		ug/l	0.10	--	1
Naphthalene	ND		ug/l	0.10	--	1
Benzo(a)anthracene	ND		ug/l	0.10	--	1
Benzo(a)pyrene	ND		ug/l	0.10	--	1
Benzo(b)fluoranthene	ND		ug/l	0.10	--	1
Benzo(k)fluoranthene	ND		ug/l	0.10	--	1
Chrysene	ND		ug/l	0.10	--	1
Acenaphthylene	ND		ug/l	0.10	--	1
Anthracene	ND		ug/l	0.10	--	1
Benzo(ghi)perylene	ND		ug/l	0.10	--	1
Fluorene	ND		ug/l	0.10	--	1
Phenanthrene	ND		ug/l	0.10	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	--	1
Pyrene	ND		ug/l	0.10	--	1
Pentachlorophenol	ND		ug/l	1.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	49		25-87
Phenol-d6	38		16-65
Nitrobenzene-d5	75		42-122
2-Fluorobiphenyl	69		46-121
2,4,6-Tribromophenol	90		45-128
4-Terphenyl-d14	77		47-138

Project Name: 120 BROOKSIDE AVE

Lab Number: L1833609

Project Number: 120 BROOKSIDE AVE

Report Date: 08/27/18

**Method Blank Analysis
Batch Quality Control**

Analytical Method: 129,625.1
 Analytical Date: 08/26/18 03:46
 Analyst: SZ

Extraction Method: EPA 625.1
 Extraction Date: 08/24/18 21:40

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1150467-1					
Bis(2-ethylhexyl)phthalate	ND		ug/l	2.2	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	95		42-122
2-Fluorobiphenyl	88		46-121
4-Terphenyl-d14	97		47-138

Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

**Method Blank Analysis
Batch Quality Control**

Analytical Method: 129,625.1-SIM
Analytical Date: 08/27/18 14:44
Analyst: DV

Extraction Method: EPA 625.1
Extraction Date: 08/24/18 21:39

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1150468-1					
Acenaphthene	ND		ug/l	0.10	--
Fluoranthene	ND		ug/l	0.10	--
Naphthalene	ND		ug/l	0.10	--
Benzo(a)anthracene	ND		ug/l	0.10	--
Benzo(a)pyrene	ND		ug/l	0.10	--
Benzo(b)fluoranthene	ND		ug/l	0.10	--
Benzo(k)fluoranthene	ND		ug/l	0.10	--
Chrysene	ND		ug/l	0.10	--
Acenaphthylene	ND		ug/l	0.10	--
Anthracene	ND		ug/l	0.10	--
Benzo(ghi)perylene	ND		ug/l	0.10	--
Fluorene	ND		ug/l	0.10	--
Phenanthrene	ND		ug/l	0.10	--
Dibenzo(a,h)anthracene	ND		ug/l	0.10	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	--
Pyrene	ND		ug/l	0.10	--
Pentachlorophenol	ND		ug/l	1.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	55		25-87
Phenol-d6	42		16-65
Nitrobenzene-d5	93		42-122
2-Fluorobiphenyl	85		46-121
2,4,6-Tribromophenol	100		45-128
4-Terphenyl-d14	101		47-138

Lab Control Sample Analysis

Batch Quality Control

Project Name: 120 BROOKSIDE AVE

Lab Number: L1833609

Project Number: 120 BROOKSIDE AVE

Report Date: 08/27/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1150467-2								
Bis(2-ethylhexyl)phthalate	110		-		29-137	-		30
Butyl benzyl phthalate	115		-		1-140	-		30
Di-n-butylphthalate	113		-		8-120	-		30
Di-n-octylphthalate	122		-		19-132	-		30
Diethyl phthalate	108		-		1-120	-		30
Dimethyl phthalate	109		-		1-120	-		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	101				42-122
2-Fluorobiphenyl	90				46-121
4-Terphenyl-d14	100				47-138

Lab Control Sample Analysis

Batch Quality Control

Project Name: 120 BROOKSIDE AVE

Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609

Report Date: 08/27/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1150468-2								
Acenaphthene	92		-		60-132	-		30
Fluoranthene	91		-		43-121	-		30
Naphthalene	76		-		36-120	-		30
Benzo(a)anthracene	81		-		42-133	-		30
Benzo(a)pyrene	87		-		32-148	-		30
Benzo(b)fluoranthene	83		-		42-140	-		30
Benzo(k)fluoranthene	93		-		25-146	-		30
Chrysene	89		-		44-140	-		30
Acenaphthylene	87		-		54-126	-		30
Anthracene	93		-		43-120	-		30
Benzo(ghi)perylene	90		-		1-195	-		30
Fluorene	97		-		70-120	-		30
Phenanthrene	88		-		65-120	-		30
Dibenzo(a,h)anthracene	93		-		1-200	-		30
Indeno(1,2,3-cd)pyrene	88		-		1-151	-		30
Pyrene	90		-		70-120	-		30
Pentachlorophenol	99		-		38-152	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 120 BROOKSIDE AVE

Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609

Report Date: 08/27/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1150468-2

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	54				25-87
Phenol-d6	40				16-65
Nitrobenzene-d5	89				42-122
2-Fluorobiphenyl	83				46-121
2,4,6-Tribromophenol	99				45-128
4-Terphenyl-d14	99				47-138

PCBS

Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

SAMPLE RESULTS

Lab ID: L1833609-01
 Client ID: DW-1
 Sample Location: 120 BROOKSIDE AVE

Date Collected: 08/24/18 12:00
 Date Received: 08/24/18
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 127,608.3
 Analytical Date: 08/26/18 21:02
 Analyst: HT

Extraction Method: EPA 608.3
 Extraction Date: 08/25/18 01:25
 Cleanup Method: EPA 3665A
 Cleanup Date: 08/25/18
 Cleanup Method: EPA 3660B
 Cleanup Date: 08/25/18

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.250	--	1	A
Aroclor 1221	ND		ug/l	0.250	--	1	A
Aroclor 1232	ND		ug/l	0.250	--	1	A
Aroclor 1242	ND		ug/l	0.250	--	1	A
Aroclor 1248	ND		ug/l	0.250	--	1	A
Aroclor 1254	ND		ug/l	0.250	--	1	A
Aroclor 1260	ND		ug/l	0.200	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	83		37-123	A
Decachlorobiphenyl	80		38-114	A
2,4,5,6-Tetrachloro-m-xylene	78		37-123	B
Decachlorobiphenyl	76		38-114	B

Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

**Method Blank Analysis
Batch Quality Control**

Analytical Method: 127,608.3
Analytical Date: 08/26/18 21:14
Analyst: HT

Extraction Method: EPA 608.3
Extraction Date: 08/24/18 20:03
Cleanup Method: EPA 3665A
Cleanup Date: 08/25/18
Cleanup Method: EPA 3660B
Cleanup Date: 08/25/18

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG1150448-1						
Aroclor 1016	ND		ug/l	0.250	--	A
Aroclor 1221	ND		ug/l	0.250	--	A
Aroclor 1232	ND		ug/l	0.250	--	A
Aroclor 1242	ND		ug/l	0.250	--	A
Aroclor 1248	ND		ug/l	0.250	--	A
Aroclor 1254	ND		ug/l	0.250	--	A
Aroclor 1260	ND		ug/l	0.200	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		37-123	A
Decachlorobiphenyl	76		38-114	A
2,4,5,6-Tetrachloro-m-xylene	59		37-123	B
Decachlorobiphenyl	72		38-114	B

Lab Control Sample Analysis Batch Quality Control

Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG1150448-2									
Aroclor 1016	72		-		50-140	-		36	A
Aroclor 1260	73		-		8-140	-		38	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68				37-123	A
Decachlorobiphenyl	80				38-114	A
2,4,5,6-Tetrachloro-m-xylene	62				37-123	B
Decachlorobiphenyl	75				38-114	B

METALS

Project Name: 120 BROOKSIDE AVE

Lab Number: L1833609

Project Number: 120 BROOKSIDE AVE

Report Date: 08/27/18

SAMPLE RESULTS

Lab ID: L1833609-01

Date Collected: 08/24/18 12:00

Client ID: DW-1

Date Received: 08/24/18

Sample Location: 120 BROOKSIDE AVE

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	08/25/18 11:00	08/27/18 11:17	EPA 3005A	3,200.8	AM
Arsenic, Total	0.00152		mg/l	0.00100	--	1	08/25/18 11:00	08/27/18 11:17	EPA 3005A	3,200.8	AM
Cadmium, Total	0.00030		mg/l	0.00020	--	1	08/25/18 11:00	08/27/18 11:17	EPA 3005A	3,200.8	AM
Chromium, Total	0.00694		mg/l	0.00100	--	1	08/25/18 11:00	08/27/18 11:17	EPA 3005A	3,200.8	AM
Copper, Total	0.01740		mg/l	0.00100	--	1	08/25/18 11:00	08/27/18 11:17	EPA 3005A	3,200.8	AM
Iron, Total	3.54		mg/l	0.050	--	1	08/25/18 11:00	08/27/18 03:37	EPA 3005A	19,200.7	PE
Lead, Total	0.07857		mg/l	0.00100	--	1	08/25/18 11:00	08/27/18 11:17	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	08/27/18 08:45	08/27/18 12:49	EPA 245.1	3,245.1	MG
Nickel, Total	0.00627		mg/l	0.00200	--	1	08/25/18 11:00	08/27/18 11:17	EPA 3005A	3,200.8	AM
Selenium, Total	0.00526		mg/l	0.00500	--	1	08/25/18 11:00	08/27/18 11:17	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	08/25/18 11:00	08/27/18 11:17	EPA 3005A	3,200.8	AM
Zinc, Total	0.02271		mg/l	0.01000	--	1	08/25/18 11:00	08/27/18 11:17	EPA 3005A	3,200.8	AM
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		08/27/18 11:17	NA	107,-	



Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1150589-1									
Antimony, Total	ND	mg/l	0.00400	--	1	08/25/18 11:00	08/27/18 10:40	3,200.8	AM
Arsenic, Total	ND	mg/l	0.00100	--	1	08/25/18 11:00	08/27/18 10:40	3,200.8	AM
Cadmium, Total	ND	mg/l	0.00020	--	1	08/25/18 11:00	08/27/18 10:40	3,200.8	AM
Chromium, Total	ND	mg/l	0.00100	--	1	08/25/18 11:00	08/27/18 10:40	3,200.8	AM
Copper, Total	ND	mg/l	0.00100	--	1	08/25/18 11:00	08/27/18 10:40	3,200.8	AM
Lead, Total	ND	mg/l	0.00100	--	1	08/25/18 11:00	08/27/18 10:40	3,200.8	AM
Nickel, Total	ND	mg/l	0.00200	--	1	08/25/18 11:00	08/27/18 10:40	3,200.8	AM
Selenium, Total	ND	mg/l	0.00500	--	1	08/25/18 11:00	08/27/18 10:40	3,200.8	AM
Silver, Total	ND	mg/l	0.00040	--	1	08/25/18 11:00	08/27/18 10:40	3,200.8	AM
Zinc, Total	ND	mg/l	0.01000	--	1	08/25/18 11:00	08/27/18 10:40	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1150590-1									
Iron, Total	ND	mg/l	0.050	--	1	08/25/18 11:00	08/27/18 01:26	19,200.7	PE

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1150897-1									
Mercury, Total	ND	mg/l	0.00020	--	1	08/27/18 08:45	08/27/18 12:45	3,245.1	MG

Prep Information

Digestion Method: EPA 245.1



Lab Control Sample Analysis

Batch Quality Control

Project Name: 120 BROOKSIDE AVE

Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609

Report Date: 08/27/18

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1150589-2								
Antimony, Total	97		-		85-115	-		
Arsenic, Total	106		-		85-115	-		
Cadmium, Total	109		-		85-115	-		
Chromium, Total	101		-		85-115	-		
Copper, Total	108		-		85-115	-		
Lead, Total	109		-		85-115	-		
Nickel, Total	106		-		85-115	-		
Selenium, Total	109		-		85-115	-		
Silver, Total	114		-		85-115	-		
Zinc, Total	112		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1150590-2								
Iron, Total	103		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1150897-2								
Mercury, Total	97		-		85-115	-		

Matrix Spike Analysis Batch Quality Control

Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1150589-3 QC Sample: L1833471-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.6026	120		-	-		70-130	-		20
Arsenic, Total	0.00228	0.12	0.1363	112		-	-		70-130	-		20
Cadmium, Total	0.00057	0.051	0.05590	108		-	-		70-130	-		20
Chromium, Total	0.00466	0.2	0.2231	109		-	-		70-130	-		20
Copper, Total	0.01501	0.25	0.2841	108		-	-		70-130	-		20
Lead, Total	0.00702	0.51	0.6035	117		-	-		70-130	-		20
Nickel, Total	0.00708	0.5	0.5285	104		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1368	114		-	-		70-130	-		20
Silver, Total	ND	0.05	0.05919	118		-	-		70-130	-		20
Zinc, Total	0.02939	0.5	0.5625	107		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1150590-3 QC Sample: L1833471-01 Client ID: MS Sample												
Iron, Total	3.81	1	3.13	0	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1150590-7 QC Sample: L1833471-02 Client ID: MS Sample												
Iron, Total	1.45	1	2.45	100		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1150897-3 QC Sample: L1833609-01 Client ID: DW-1												
Mercury, Total	ND	0.005	0.00524	105		-	-		70-130	-		20

Lab Duplicate Analysis Batch Quality Control

Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1150589-4 QC Sample: L1833471-01 Client ID: DUP Sample						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	0.00228	0.00206	mg/l	10		20
Cadmium, Total	0.00057	0.00060	mg/l	5		20
Chromium, Total	0.00466	0.00388	mg/l	18		20
Copper, Total	0.01501	0.01364	mg/l	10		20
Lead, Total	0.00702	0.00710	mg/l	1		20
Nickel, Total	0.00708	0.00713	mg/l	1		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.02939	0.02948	mg/l	0		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1150590-4 QC Sample: L1833471-01 Client ID: DUP Sample						
Iron, Total	3.81	3.17	mg/l	18		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1150590-8 QC Sample: L1833471-02 Client ID: DUP Sample						
Iron, Total	1.45	1.50	mg/l	3		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1150897-4 QC Sample: L1833609-01 Client ID: DW-1						
Mercury, Total	ND	ND	mg/l	NC		20



INORGANICS & MISCELLANEOUS

Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

SAMPLE RESULTS

Lab ID: L1833609-01
Client ID: DW-1
Sample Location: 120 BROOKSIDE AVE

Date Collected: 08/24/18 12:00
Date Received: 08/24/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Dissolved	1500		mg/l	10	--	1	-	08/25/18 19:10	121,2540C	CW
Solids, Total Suspended	210		mg/l	5.0	NA	1	-	08/25/18 10:00	121,2540D	JT
Cyanide, Total	ND		mg/l	0.005	--	1	08/26/18 13:10	08/27/18 11:16	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	08/25/18 02:07	121,4500CL-D	UN
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	08/26/18 16:30	08/27/18 18:36	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.00	--	1	08/25/18 07:00	08/25/18 11:00	74,1664A	KZ
Phenolics, Total	ND		mg/l	0.030	--	1	08/27/18 04:15	08/27/18 07:29	4,420.1	GD
Chromium, Hexavalent	ND		mg/l	0.010	--	1	08/25/18 00:47	08/25/18 01:25	1,7196A	UN
Anions by Ion Chromatography - Westborough Lab										
Chloride	680.		mg/l	12.5	--	25	-	08/26/18 18:52	44,300.0	JR



Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1150496-5										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	08/25/18 00:47	08/25/18 01:23	1,7196A	UN
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1150523-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	08/25/18 02:07	121,4500CL-D	UN
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1150533-1										
TPH, SGT-HEM	ND		mg/l	4.00	--	1	08/25/18 07:00	08/25/18 11:00	74,1664A	KZ
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1150541-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	08/25/18 10:00	121,2540D	JT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1150669-1										
Solids, Total Dissolved	ND		mg/l	10	--	1	-	08/25/18 19:10	121,2540C	CW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1150722-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	08/26/18 16:30	08/27/18 18:23	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1150749-1										
Cyanide, Total	ND		mg/l	0.005	--	1	08/26/18 13:10	08/27/18 10:59	121,4500CN-CE	LH
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1150834-1										
Chloride	ND		mg/l	0.500	--	1	-	08/26/18 18:28	44,300.0	JR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1150845-1										
Phenolics, Total	ND		mg/l	0.030	--	1	08/27/18 04:15	08/27/18 07:28	4,420.1	GD

Lab Control Sample Analysis

Batch Quality Control

Project Name: 120 BROOKSIDE AVE

Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609

Report Date: 08/27/18

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1150496-6								
Chromium, Hexavalent	98		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1150523-2								
Chlorine, Total Residual	101		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1150533-2								
TPH	85		-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1150669-2								
Solids, Total Dissolved	93		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1150722-2								
Nitrogen, Ammonia	82		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1150749-2								
Cyanide, Total	93		-		90-110	-		
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1150834-2								
Chloride	101		-		90-110	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: 120 BROOKSIDE AVE

Lab Number: L1833609

Project Number: 120 BROOKSIDE AVE

Report Date: 08/27/18

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1150845-2					
Phenolics, Total	86	-	70-130	-	

Matrix Spike Analysis Batch Quality Control

Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1150496-8 QC Sample: L1833609-01 Client ID: DW-1												
Chromium, Hexavalent	ND	0.1	0.103	103	-	-	-	-	85-115	-	-	20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1150523-4 QC Sample: L1833609-01 Client ID: DW-1												
Chlorine, Total Residual	ND	0.248	0.25	101	-	-	-	-	80-120	-	-	20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1150533-3 QC Sample: L1833609-01 Client ID: DW-1												
TPH	ND	20	12.0	60	Q	-	-	-	64-132	-	-	34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1150722-4 QC Sample: L1833444-01 Client ID: MS Sample												
Nitrogen, Ammonia	ND	4	3.84	96	-	-	-	-	80-120	-	-	20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1150749-4 QC Sample: L1833471-02 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.190	95	-	-	-	-	90-110	-	-	30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1150834-3 QC Sample: L1833609-01 Client ID: DW-1												
Chloride	680	100	767	88	Q	-	-	-	90-110	-	-	18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1150845-4 QC Sample: L1833609-01 Client ID: DW-1												
Phenolics, Total	ND	0.4	0.29	74	-	-	-	-	70-130	-	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 120 BROOKSIDE AVE

Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609

Report Date: 08/27/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1150496-7 QC Sample: L1833609-01 Client ID: DW-1						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1150523-3 QC Sample: L1833609-01 Client ID: DW-1						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1150541-2 QC Sample: L1833471-01 Client ID: DUP Sample						
Solids, Total Suspended	210	220	mg/l	5		29
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1150669-3 QC Sample: L1833609-01 Client ID: DW-1						
Solids, Total Dissolved	1500	1500	mg/l	0		10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1150722-3 QC Sample: L1833444-01 Client ID: DUP Sample						
Nitrogen, Ammonia	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1150749-3 QC Sample: L1833471-01 Client ID: DUP Sample						
Cyanide, Total	ND	ND	mg/l	NC		30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1150834-4 QC Sample: L1833609-01 Client ID: DW-1						
Chloride	680	678	mg/l	0		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1150845-3 QC Sample: L1833609-01 Client ID: DW-1						
Phenolics, Total	ND	ND	mg/l	NC		20

Project Name: 120 BROOKSIDE AVE**Lab Number:** L1833609**Project Number:** 120 BROOKSIDE AVE**Report Date:** 08/27/18**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1833609-01A	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1833609-01B	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1833609-01C	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1833609-01D	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1833609-01E	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1833609-01F	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1833609-01G	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		504(14)
L1833609-01H	Vial Na2S2O3 preserved	A	NA		3.9	Y	Absent		504(14)
L1833609-01I	Plastic 250ml unpreserved	A	7	7	3.9	Y	Absent		TDS-2540(7)
L1833609-01J	Plastic 250ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L1833609-01K	Plastic 250ml NaOH preserved	A	>12	>12	3.9	Y	Absent		TCN-4500(14)
L1833609-01L	Plastic 500ml H2SO4 preserved	A	<2	<2	3.9	Y	Absent		NH3-4500(28)
L1833609-01M	Plastic 950ml unpreserved	A	7	7	3.9	Y	Absent		CL-300(28),HEXCR-7196(1),TRC-4500(1)
L1833609-01N	Plastic 950ml unpreserved	A	7	7	3.9	Y	Absent		TSS-2540(7)
L1833609-01O	Amber 1000ml H2SO4 preserved	A	<2	<2	3.9	Y	Absent		TPHENOL-420(28)
L1833609-01P	Amber 1000ml HCl preserved	A	NA		3.9	Y	Absent		TPH-1664(28)
L1833609-01Q	Amber 1000ml HCl preserved	A	NA		3.9	Y	Absent		TPH-1664(28)
L1833609-01R	Amber 1000ml Na2S2O3	A	7	7	3.9	Y	Absent		PCB-608.3(7)
L1833609-01S	Amber 1000ml Na2S2O3	A	7	7	3.9	Y	Absent		PCB-608.3(7)
L1833609-01T	Amber 1000ml Na2S2O3	A	7	7	3.9	Y	Absent		625.1-RGP(7)
L1833609-01U	Amber 1000ml Na2S2O3	A	7	7	3.9	Y	Absent		625.1-RGP(7)

Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Serial_No:08271819:45
Lab Number: L1833609
Report Date: 08/27/18

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1833609-01V	Amber 1000ml Na2S2O3	A	7	7	3.9	Y	Absent		625.1-SIM-RGP(7)
L1833609-01W	Amber 1000ml Na2S2O3	A	7	7	3.9	Y	Absent		625.1-SIM-RGP(7)

Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

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

Terms

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

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

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

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

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

Report Format: Data Usability Report



Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedances are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

Project Name: 120 BROOKSIDE AVE
Project Number: 120 BROOKSIDE AVE

Lab Number: L1833609
Report Date: 08/27/18

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.
- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 14 Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- 74 Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, EPA-821-R-98-002, February 1999.
- 107 Alpha Analytical - In-house calculation method.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- 127 Method 608.3: Organochlorine Pesticides and PCBs by GC/HSD, EPA 821-R-16-009, December 2016.
- 128 Method 624.1: Purgeables by GC/MS, EPA 821-R-16-008, December 2016.
- 129 Method 625.1: Base/Neutrals and Acids by GC/MS, EPA 821-R-16-007, December 2016.

LIMITATION OF LIABILITIES

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

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



Certification Information

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

Westborough Facility

EPA 624: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

EPA 300: DW: Bromide

EPA 6860: SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO₂, NO₃.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B

EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1:**

Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E,**

SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, SM9222D.**

Mansfield Facility:

Drinking Water

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

EPA 522.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

EPA 245.1 Hg.

SM2340B

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



ANALYTICAL REPORT

Lab Number:	L1834827
Client:	FSL Associates 358 Chestnut Hill Ave. Brighton, MA 02135
ATTN:	Jarod Coumoyer
Phone:	(617) 232-0001
Project Name:	120 BROOKSIDE AVE.
Project Number:	120 BROOKSIDE AVE
Report Date:	09/06/18

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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

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



Project Name: 120 BROOKSIDE AVE.
Project Number: 120 BROOKSIDE AVE

Lab Number: L1834827
Report Date: 09/06/18

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1834827-01	DW-1	WATER	120 BROOKSIDE AVE.	09/04/18 15:20	09/04/18

Project Name: 120 BROOKSIDE AVE.
Project Number: 120 BROOKSIDE AVE

Lab Number: L1834827
Report Date: 09/06/18

Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

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

Please contact Client Services at 800-624-9220 with any questions.

Project Name: 120 BROOKSIDE AVE.
Project Number: 120 BROOKSIDE AVE

Lab Number: L1834827
Report Date: 09/06/18

Case Narrative (continued)

Sample Receipt

L1834827-01: The sample was received above the appropriate pH for the Dissolved Metals and Hardness analyses. The laboratory added HNO₃ to a pH <2.

Dissolved Metals

The WG1154045-4 Laboratory Duplicate RPD for cadmium (30%), performed on L1834827-01, is above the acceptance criteria; however, the sample and duplicate results are less than five times the reporting limit.

Therefore, the RPD is valid.

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

Authorized Signature:

 Amita Naik

Title: Technical Director/Representative

Date: 09/06/18

METALS

Project Name: 120 BROOKSIDE AVE.

Lab Number: L1834827

Project Number: 120 BROOKSIDE AVE

Report Date: 09/06/18

SAMPLE RESULTS

Lab ID: L1834827-01

Date Collected: 09/04/18 15:20

Client ID: DW-1

Date Received: 09/04/18

Sample Location: 120 BROOKSIDE AVE.

Field Prep: Refer to COC

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
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Total Hardness by SM 2340B - Mansfield Lab

Hardness	353		mg/l	0.660	NA	1	09/06/18 06:40	09/06/18 14:13	EPA 3005A	19,200.7	AB
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Dissolved Metals - Mansfield Lab

Antimony, Dissolved	ND		mg/l	0.0040	--	1	09/06/18 07:15	09/06/18 11:35	EPA 3005A	3,200.8	AM
Arsenic, Dissolved	ND		mg/l	0.0010	--	1	09/06/18 07:15	09/06/18 11:35	EPA 3005A	3,200.8	AM
Cadmium, Dissolved	0.0002		mg/l	0.0002	--	1	09/06/18 07:15	09/06/18 11:35	EPA 3005A	3,200.8	AM
Chromium, Dissolved	ND		mg/l	0.0010	--	1	09/06/18 07:15	09/06/18 11:35	EPA 3005A	3,200.8	AM
Copper, Dissolved	0.0045		mg/l	0.0010	--	1	09/06/18 07:15	09/06/18 11:35	EPA 3005A	3,200.8	AM
Iron, Dissolved	0.186		mg/l	0.050	--	1	09/06/18 07:15	09/06/18 11:02	EPA 3005A	19,200.7	PE
Lead, Dissolved	0.0023		mg/l	0.0010	--	1	09/06/18 07:15	09/06/18 11:35	EPA 3005A	3,200.8	AM
Mercury, Dissolved	ND		mg/l	0.00020	--	1	09/06/18 10:19	09/06/18 13:49	EPA 245.1	3,245.1	MG
Nickel, Dissolved	0.0031		mg/l	0.0020	--	1	09/06/18 07:15	09/06/18 11:35	EPA 3005A	3,200.8	AM
Selenium, Dissolved	ND		mg/l	0.0050	--	1	09/06/18 07:15	09/06/18 11:35	EPA 3005A	3,200.8	AM
Silver, Dissolved	ND		mg/l	0.0004	--	1	09/06/18 07:15	09/06/18 11:35	EPA 3005A	3,200.8	AM
Zinc, Dissolved	ND		mg/l	0.0100	--	1	09/06/18 07:15	09/06/18 11:35	EPA 3005A	3,200.8	AM



Project Name: 120 BROOKSIDE AVE.
Project Number: 120 BROOKSIDE AVE

Lab Number: L1834827
Report Date: 09/06/18

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1154027-1									
Hardness	ND	mg/l	0.660	NA	1	09/06/18 06:40	09/06/18 13:41	19,200.7	AB

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG1154045-1									
Antimony, Dissolved	ND	mg/l	0.0040	--	1	09/06/18 07:15	09/06/18 11:03	3,200.8	AM
Arsenic, Dissolved	ND	mg/l	0.0010	--	1	09/06/18 07:15	09/06/18 11:03	3,200.8	AM
Cadmium, Dissolved	ND	mg/l	0.0002	--	1	09/06/18 07:15	09/06/18 11:03	3,200.8	AM
Chromium, Dissolved	ND	mg/l	0.0010	--	1	09/06/18 07:15	09/06/18 11:03	3,200.8	AM
Copper, Dissolved	ND	mg/l	0.0010	--	1	09/06/18 07:15	09/06/18 11:03	3,200.8	AM
Lead, Dissolved	ND	mg/l	0.0010	--	1	09/06/18 07:15	09/06/18 11:03	3,200.8	AM
Nickel, Dissolved	ND	mg/l	0.0020	--	1	09/06/18 07:15	09/06/18 11:03	3,200.8	AM
Selenium, Dissolved	ND	mg/l	0.0050	--	1	09/06/18 07:15	09/06/18 11:03	3,200.8	AM
Silver, Dissolved	ND	mg/l	0.0004	--	1	09/06/18 07:15	09/06/18 11:03	3,200.8	AM
Zinc, Dissolved	ND	mg/l	0.0100	--	1	09/06/18 07:15	09/06/18 11:03	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG1154046-1									
Iron, Dissolved	ND	mg/l	0.050	--	1	09/06/18 07:15	09/06/18 10:53	19,200.7	PE

Prep Information

Digestion Method: EPA 3005A

Project Name: 120 BROOKSIDE AVE.

Lab Number: L1834827

Project Number: 120 BROOKSIDE AVE

Report Date: 09/06/18

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG1154157-1										
Mercury, Dissolved	ND		mg/l	0.00020	--	1	09/06/18 10:19	09/06/18 13:41	3,245.1	MG

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: 120 BROOKSIDE AVE.

Project Number: 120 BROOKSIDE AVE

Lab Number: L1834827

Report Date: 09/06/18

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1154027-2								
Hardness	102		-		85-115	-		
Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1154045-2								
Antimony, Dissolved	96		-		85-115	-		
Arsenic, Dissolved	104		-		85-115	-		
Cadmium, Dissolved	108		-		85-115	-		
Chromium, Dissolved	100		-		85-115	-		
Copper, Dissolved	97		-		85-115	-		
Lead, Dissolved	103		-		85-115	-		
Nickel, Dissolved	100		-		85-115	-		
Selenium, Dissolved	110		-		85-115	-		
Silver, Dissolved	102		-		85-115	-		
Zinc, Dissolved	109		-		85-115	-		
Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1154046-2								
Iron, Dissolved	112		-		85-115	-		
Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1154157-2								
Mercury, Dissolved	108		-		85-115	-		

Matrix Spike Analysis Batch Quality Control

Project Name: 120 BROOKSIDE AVE.

Lab Number: L1834827

Project Number: 120 BROOKSIDE AVE

Report Date: 09/06/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1154027-3 QC Sample: L1834913-01 Client ID: MS Sample												
Hardness	434	66.2	469	53	Q	-	-		75-125	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1154045-3 QC Sample: L1834827-01 Client ID: DW-1												
Antimony, Dissolved	ND	0.5	0.5381	108		-	-		70-130	-		20
Arsenic, Dissolved	ND	0.12	0.1252	104		-	-		70-130	-		20
Cadmium, Dissolved	0.0002	0.051	0.0555	108		-	-		70-130	-		20
Chromium, Dissolved	ND	0.2	0.1926	96		-	-		70-130	-		20
Copper, Dissolved	0.0045	0.25	0.2359	92		-	-		70-130	-		20
Lead, Dissolved	0.0023	0.51	0.5359	105		-	-		70-130	-		20
Nickel, Dissolved	0.0031	0.5	0.5014	100		-	-		70-130	-		20
Selenium, Dissolved	ND	0.12	0.1322	110		-	-		70-130	-		20
Silver, Dissolved	ND	0.05	0.050	100		-	-		70-130	-		20
Zinc, Dissolved	ND	0.5	0.5356	107		-	-		70-130	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1154046-3 QC Sample: L1834827-01 Client ID: DW-1												
Iron, Dissolved	0.186	1	1.21	102		-	-		75-125	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1154157-3 QC Sample: L1834827-01 Client ID: DW-1												
Mercury, Dissolved	ND	0.005	0.00506	101		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 120 BROOKSIDE AVE.

Project Number: 120 BROOKSIDE AVE

Lab Number: L1834827

Report Date: 09/06/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1154045-4 QC Sample: L1834827-01 Client ID: DW-1						
Antimony, Dissolved	ND	ND	mg/l	NC		20
Arsenic, Dissolved	ND	ND	mg/l	NC		20
Cadmium, Dissolved	0.0002	0.0003	mg/l	30	Q	20
Chromium, Dissolved	ND	ND	mg/l	NC		20
Copper, Dissolved	0.0045	0.0047	mg/l	5		20
Lead, Dissolved	0.0023	0.0023	mg/l	0		20
Nickel, Dissolved	0.0031	0.0031	mg/l	1		20
Selenium, Dissolved	ND	ND	mg/l	NC		20
Silver, Dissolved	ND	ND	mg/l	NC		20
Zinc, Dissolved	ND	ND	mg/l	NC		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1154046-4 QC Sample: L1834827-01 Client ID: DW-1						
Iron, Dissolved	0.186	0.163	mg/l	13		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1154157-4 QC Sample: L1834827-01 Client ID: DW-1						
Mercury, Dissolved	ND	ND	mg/l	NC		20

INORGANICS & MISCELLANEOUS

Project Name: 120 BROOKSIDE AVE.

Lab Number: L1834827

Project Number: 120 BROOKSIDE AVE

Report Date: 09/06/18

SAMPLE RESULTS

Lab ID: L1834827-01

Date Collected: 09/04/18 15:20

Client ID: DW-1

Date Received: 09/04/18

Sample Location: 120 BROOKSIDE AVE.

Field Prep: Refer to COC

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	73.5		mg CaCO3/L	2.00	NA	1	-	09/05/18 09:29	121,2320B	BR
pH (H)	6.3		SU	-	NA	1	-	09/04/18 23:16	121,4500H+-B	AS



Project Name: 120 BROOKSIDE AVE.

Lab Number: L1834827

Project Number: 120 BROOKSIDE AVE

Report Date: 09/06/18

Method Blank Analysis
Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1153672-1									
Alkalinity, Total	ND	mg CaCO3/L	2.00	NA	1	-	09/05/18 09:29	121,2320B	BR

Lab Control Sample Analysis Batch Quality Control

Project Name: 120 BROOKSIDE AVE.
Project Number: 120 BROOKSIDE AVE

Lab Number: L1834827
Report Date: 09/06/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1153534-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1153672-2								
Alkalinity, Total	102		-		90-110	-		10

Matrix Spike Analysis
Batch Quality Control

Project Name: 120 BROOKSIDE AVE.

Lab Number: L1834827

Project Number: 120 BROOKSIDE AVE

Report Date: 09/06/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1153672-4 QC Sample: L1834293-01 Client ID: MS Sample												
Alkalinity, Total	49.4	100	149	100	-	-	-	-	86-116	-	-	10

Lab Duplicate Analysis

Batch Quality Control

Project Name: 120 BROOKSIDE AVE.

Project Number: 120 BROOKSIDE AVE

Lab Number: L1834827

Report Date: 09/06/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1153534-2 QC Sample: L1834827-01 Client ID: DW-1						
pH (H)	6.3	6.4	SU	2		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1153672-3 QC Sample: L1834293-01 Client ID: DUP Sample						
Alkalinity, Total	49.4	40.1	mg CaCO3/L	21	Q	10

Project Name: 120 BROOKSIDE AVE.

Project Number: 120 BROOKSIDE AVE

Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1834827-01A	Plastic 250ml HNO3 preserved	A	7	<2	4.2	N	Absent		AG-2008S(180),CR-2008S(180),FE-RI(180),AS-2008S(180),PB-2008S(180),ZN-2008S(180),NI-2008S(180),SE-2008S(180),CD-2008S(180),CU-2008S(180),SB-2008S(180),HG-R(28)
L1834827-01B	Plastic 250ml HNO3 preserved	A	7	<2	4.2	N	Absent		HARDU(180)
L1834827-01C	Plastic 250ml unpreserved/No Headspace	A	NA		4.2	Y	Absent		ALK-T-2320(14)
L1834827-01D	Plastic 250ml unpreserved	A	7	7	4.2	Y	Absent		PH-4500(.01)

Project Name: 120 BROOKSIDE AVE.
Project Number: 120 BROOKSIDE AVE

Lab Number: L1834827
Report Date: 09/06/18

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

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

Terms

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

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

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

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

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

Report Format: Data Usability Report



Project Name: 120 BROOKSIDE AVE.
Project Number: 120 BROOKSIDE AVE

Lab Number: L1834827
Report Date: 09/06/18

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedances are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

Project Name: 120 BROOKSIDE AVE.
Project Number: 120 BROOKSIDE AVE

Lab Number: L1834827
Report Date: 09/06/18

REFERENCES

- 3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

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

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



Certification Information

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

Westborough Facility

EPA 624: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

EPA 300: DW: Bromide

EPA 6860: SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO₂, NO₃.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B

EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1:**

Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E,**

SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, SM9222D.**

Mansfield Facility:

Drinking Water

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

EPA 522.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

EPA 245.1 Hg.

SM2340B

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



ANALYTICAL REPORT

Lab Number:	L1833739
Client:	FSL Associates 358 Chestnut Hill Ave. Brighton, MA 02135
ATTN:	Jarod Coumoyer
Phone:	(617) 232-0001
Project Name:	CHARLES RIVER
Project Number:	120 BROOKSIDE AVENUE
Report Date:	08/28/18

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



Project Name: CHARLES RIVER
Project Number: 120 BROOKSIDE AVENUE

Lab Number: L1833739
Report Date: 08/28/18

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1833739-01	CR1	WATER	CHARLES RIVER	08/27/18 11:30	08/27/18

Project Name: CHARLES RIVER
Project Number: 120 BROOKSIDE AVENUE

Lab Number: L1833739
Report Date: 08/28/18

Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

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

Please contact Client Services at 800-624-9220 with any questions.

Project Name: CHARLES RIVER
Project Number: 120 BROOKSIDE AVENUE

Lab Number: L1833739
Report Date: 08/28/18

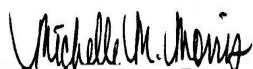
Case Narrative (continued)

Sample Receipt

The analyses performed were specified by the client.

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

Authorized Signature:



Michelle M. Morris

Title: Technical Director/Representative

Date: 08/28/18

METALS

Project Name: CHARLES RIVER
Project Number: 120 BROOKSIDE AVENUE

Lab Number: L1833739
Report Date: 08/28/18

SAMPLE RESULTS

Lab ID: L1833739-01
 Client ID: CR1
 Sample Location: CHARLES RIVER

Date Collected: 08/27/18 11:30
 Date Received: 08/27/18
 Field Prep: Not Specified

Sample Depth:
 Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	08/28/18 08:05	08/28/18 11:44	EPA 3005A	3,200.8	AM
Arsenic, Total	0.00101		mg/l	0.00100	--	1	08/28/18 08:05	08/28/18 11:44	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	08/28/18 08:05	08/28/18 11:44	EPA 3005A	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	08/28/18 08:05	08/28/18 11:44	EPA 3005A	3,200.8	AM
Copper, Total	0.00397		mg/l	0.00100	--	1	08/28/18 08:05	08/28/18 11:44	EPA 3005A	3,200.8	AM
Iron, Total	0.906		mg/l	0.050	--	1	08/28/18 08:05	08/28/18 14:32	EPA 3005A	19,200.7	LC
Lead, Total	0.00521		mg/l	0.00100	--	1	08/28/18 08:05	08/28/18 11:44	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	08/28/18 09:58	08/28/18 12:39	EPA 245.1	3,245.1	MG
Nickel, Total	ND		mg/l	0.00200	--	1	08/28/18 08:05	08/28/18 11:44	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	08/28/18 08:05	08/28/18 11:44	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	08/28/18 08:05	08/28/18 11:44	EPA 3005A	3,200.8	AM
Zinc, Total	0.01248		mg/l	0.01000	--	1	08/28/18 08:05	08/28/18 11:44	EPA 3005A	3,200.8	AM
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	87.9		mg/l	0.660	NA	1	08/28/18 08:05	08/28/18 14:32	EPA 3005A	19,200.7	LC



Project Name: CHARLES RIVER
Project Number: 120 BROOKSIDE AVENUE

Lab Number: L1833739
Report Date: 08/28/18

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1151216-1									
Iron, Total	ND	mg/l	0.050	--	1	08/28/18 08:05	08/28/18 13:33	19,200.7	LC

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1151216-1									
Hardness	ND	mg/l	0.660	NA	1	08/28/18 08:05	08/28/18 13:33	19,200.7	LC

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1151217-1									
Antimony, Total	ND	mg/l	0.00400	--	1	08/28/18 08:05	08/28/18 11:16	3,200.8	AM
Arsenic, Total	ND	mg/l	0.00100	--	1	08/28/18 08:05	08/28/18 11:16	3,200.8	AM
Cadmium, Total	ND	mg/l	0.00020	--	1	08/28/18 08:05	08/28/18 11:16	3,200.8	AM
Chromium, Total	ND	mg/l	0.00100	--	1	08/28/18 08:05	08/28/18 11:16	3,200.8	AM
Copper, Total	ND	mg/l	0.00100	--	1	08/28/18 08:05	08/28/18 11:16	3,200.8	AM
Lead, Total	ND	mg/l	0.00100	--	1	08/28/18 08:05	08/28/18 11:16	3,200.8	AM
Nickel, Total	ND	mg/l	0.00200	--	1	08/28/18 08:05	08/28/18 11:16	3,200.8	AM
Selenium, Total	ND	mg/l	0.00500	--	1	08/28/18 08:05	08/28/18 11:16	3,200.8	AM
Silver, Total	ND	mg/l	0.00040	--	1	08/28/18 08:05	08/28/18 11:16	3,200.8	AM
Zinc, Total	ND	mg/l	0.01000	--	1	08/28/18 08:05	08/28/18 11:16	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Project Name: CHARLES RIVER
Project Number: 120 BROOKSIDE AVENL

Lab Number: L1833739
Report Date: 08/28/18

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1151299-1									
Mercury, Total	ND	mg/l	0.00020	--	1	08/28/18 09:58	08/28/18 12:36	3,245.1	MG

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHARLES RIVER
Project Number: 120 BROOKSIDE AVENUE

Lab Number: L1833739
Report Date: 08/28/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1151216-2								
Iron, Total	115		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1151216-2								
Hardness	104		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1151217-2								
Antimony, Total	103		-		85-115	-		
Arsenic, Total	102		-		85-115	-		
Cadmium, Total	106		-		85-115	-		
Chromium, Total	104		-		85-115	-		
Copper, Total	108		-		85-115	-		
Lead, Total	112		-		85-115	-		
Nickel, Total	107		-		85-115	-		
Selenium, Total	113		-		85-115	-		
Silver, Total	110		-		85-115	-		
Zinc, Total	110		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1151299-2								
Mercury, Total	108		-		85-115	-		

Matrix Spike Analysis Batch Quality Control

Project Name: CHARLES RIVER
Project Number: 120 BROOKSIDE AVENUE

Lab Number: L1833739
Report Date: 08/28/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1151216-3 QC Sample: L1833720-01 Client ID: MS Sample												
Iron, Total	ND	1	1.15	115	-	-	-	-	75-125	-	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1151216-3 QC Sample: L1833720-01 Client ID: MS Sample												
Hardness	ND	66.2	70.1	106	-	-	-	-	75-125	-	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1151217-3 QC Sample: L1833720-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.5731	115	-	-	-	-	70-130	-	-	20
Arsenic, Total	ND	0.12	0.1379	115	-	-	-	-	70-130	-	-	20
Cadmium, Total	ND	0.051	0.06213	122	-	-	-	-	70-130	-	-	20
Chromium, Total	ND	0.2	0.2118	106	-	-	-	-	70-130	-	-	20
Copper, Total	ND	0.25	0.2665	107	-	-	-	-	70-130	-	-	20
Lead, Total	ND	0.51	0.6162	121	-	-	-	-	70-130	-	-	20
Nickel, Total	ND	0.5	0.5448	109	-	-	-	-	70-130	-	-	20
Selenium, Total	ND	0.12	0.1468	122	-	-	-	-	70-130	-	-	20
Silver, Total	ND	0.05	0.06062	121	-	-	-	-	70-130	-	-	20
Zinc, Total	ND	0.5	0.5401	108	-	-	-	-	70-130	-	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1151299-3 QC Sample: L1833739-01 Client ID: CR1												
Mercury, Total	ND	0.005	0.00491	98	-	-	-	-	70-130	-	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: CHARLES RIVER
Project Number: 120 BROOKSIDE AVENUE

Lab Number: L1833739
Report Date: 08/28/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1151216-4 QC Sample: L1833720-01 Client ID: DUP Sample						
Iron, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1151217-4 QC Sample: L1833720-01 Client ID: DUP Sample						
Copper, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1151299-4 QC Sample: L1833739-01 Client ID: CR1						
Mercury, Total	ND	ND	mg/l	NC		20

INORGANICS & MISCELLANEOUS

Project Name: CHARLES RIVER
Project Number: 120 BROOKSIDE AVENUE

Lab Number: L1833739
Report Date: 08/28/18

SAMPLE RESULTS

Lab ID: L1833739-01
Client ID: CR1
Sample Location: CHARLES RIVER

Date Collected: 08/27/18 11:30
Date Received: 08/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	7.6		SU	-	NA	1	-	08/27/18 21:04	121,4500H+B	AS
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	08/27/18 21:30	08/27/18 23:38	121,4500NH3-BH	AT



Project Name: CHARLES RIVER
Project Number: 120 BROOKSIDE AVENUE

Lab Number: L1833739
Report Date: 08/28/18

Method Blank Analysis
Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1151132-1									
Nitrogen, Ammonia	ND	mg/l	0.075	--	1	08/27/18 21:30	08/27/18 23:35	121,4500NH3-BH	AT

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHARLES RIVER
Project Number: 120 BROOKSIDE AVENUE

Lab Number: L1833739
Report Date: 08/28/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1151124-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1151132-2								
Nitrogen, Ammonia	106		-		80-120	-		20

Matrix Spike Analysis Batch Quality Control

Project Name: CHARLES RIVER
Project Number: 120 BROOKSIDE AVENUE

Lab Number: L1833739
Report Date: 08/28/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1151132-4 QC Sample: L1833739-01 Client ID: CR1												
Nitrogen, Ammonia	ND	4	3.92	98		-	-		80-120	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: CHARLES RIVER
Project Number: 120 BROOKSIDE AVENUE

Lab Number: L1833739
Report Date: 08/28/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1151124-2 QC Sample: L1833725-05 Client ID: DUP Sample						
pH	7.6	7.6	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1151132-3 QC Sample: L1833739-01 Client ID: CR1						
Nitrogen, Ammonia	ND	ND	mg/l	NC		20

Project Name: CHARLES RIVER
Project Number: 120 BROOKSIDE AVENUE

Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1833739-01A	Plastic 60ml unpreserved	A	7	7	2.4	Y	Absent		PH-4500(.01)
L1833739-01B	Plastic 250ml HNO3 preserved	A	<2	<2	2.4	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),HARDU(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L1833739-01C	Plastic 500ml H2SO4 preserved	A	<2	<2	2.4	Y	Absent		NH3-4500(28)

Project Name: CHARLES RIVER
Project Number: 120 BROOKSIDE AVENUE

Lab Number: L1833739
Report Date: 08/28/18

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

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

Terms

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

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

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

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

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

Report Format: Data Usability Report



Project Name: CHARLES RIVER
Project Number: 120 BROOKSIDE AVENUE

Lab Number: L1833739
Report Date: 08/28/18

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

Project Name: CHARLES RIVER
Project Number: 120 BROOKSIDE AVENUE

Lab Number: L1833739
Report Date: 08/28/18

REFERENCES

- 3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

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

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



Certification Information

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

Westborough Facility

EPA 624: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

EPA 300: DW: Bromide

EPA 6860: SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO₂, NO₃.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B

EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1:**

Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E,**

SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, SM9222D.

Mansfield Facility:

Drinking Water

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

EPA 522.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

EPA 245.1 Hg.

SM2340B

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

