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

54 AUBURN STREET

BROOKLINE, MASSACHUSETTS

OCTOBER 15, 2019

Prepared For:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REMEDIATION GP PROCESSING
INDUSTRIAL PERMIT UNIT (OEP 06-4)
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MA 02109-3912

On Behalf Of:
Highland Development, Inc
100 Winchester Street
Medford, MA 02155

PROJECT NO. 6577

2269 Massachusetts Avenue
Cambridge, MA 02140
www.mcphailgeo.com
(617) 868-1420

October 15, 2019

United States Environmental Protection Agency
Remediation GP Processing
Industrial Permit Unit (OEP 06-4)
5 Post Office Square, Suite 100
Boston, MA 02109-3912

Attention: To Whom It May Concern

Reference: 54 Auburn Street, Brookline, Massachusetts
Notice of Intent for Temporary Construction Dewatering Discharge;
Massachusetts Remediation General Permit MAG9100000

Ladies and Gentlemen:

In accordance with the provisions of the Remediation General Permit MAG9100000 (RGP) that was issued to the Commonwealth of Massachusetts by the US EPA, the following is a summary of the site and groundwater quality information in support of a Notice of Intent (NOI) for the discharge of construction dewatering into the Muddy River via the Town of Brookline storm drain system. The potential for temporary discharge of construction dewatering may occur during development of 54 Auburn Street located in Brookline, Massachusetts (the "subject site"). Refer to **Figure 1,** Project Location Plan for the general site locus.

These services were performed and this permit application was prepared with the authorization of Highland Development. These services are subject to the limitations contained in **Appendix A**.

The applicable RGP Notice of Intent (NOI) Form is included in **Appendix B**.

Applicant/Operator

The applicant for the Notice of Intent-Remediation General Permit is:

Highland Development
100 Winchester Street
Medford, MA 02155

Attention: Mr. Ben Rogan

Tel: (781) 393-0006

Existing Conditions

The approximate 10,350 square foot subject site is located in a residential area of Brookline and fronts onto Auburn Street to the north. The subject site is located within a block of buildings that are bounded by Park Street and Auburn Place to the west and east,

respectively. Currently, the site is used as an at-grade parking lot. Refer to **Figure 2** for the approximate limits of the subject site. Existing grades within the property are relatively level and range from about Elevation +58.5 to Elevation +61.0. Elevations as referenced herein are in feet and refer to the Boston City Base datum, which is 5.65 feet below the National Geodetic Vertical Datum of 1929 (NGVD).

Proposed Scope of Site Development

A proposed multi-story structure is planned to be constructed at the site which will include 2 to 3 levels of below grade parking, extending to approximately 25 to 30 feet below grade. Groundwater has been observed at depths varying from 19.5 to 27.4 feet below ground surface at the subject site. It is understood that excavation to construct the proposed building foundation will need to be conducted within an engineered lateral earth support system. It is anticipated due to the depths of groundwater, that conventional sumping will be sufficient to control groundwater during construction activities.

Site Environmental Setting, Review of MA DEP-listed Disposal Sites, Endangered Species and Surrounding Historical Places

Based on the current Massachusetts Geographic Information Systems (GIS) DEP Priority Resources Map of Boston, the subject site is not located within the boundaries of a Potentially Productive Aquifer or within a Zone II, Interim Wellhead Protection Area as defined by the Massachusetts Department of Environmental Protection. There are no known public or private drinking water supply wells, no Areas of Critical Environmental Concern, no fish habitats, and no habitats of Species of Special Concern or Threatened or Endangered Species within 500 feet of the subject site. There are no surface water bodies or wetland areas located at the subject site. The nearest surface water body is the Muddy River, classified by the DEP as a Class B Surface Water Body, that is located approximately 3,300 feet to the east of the subject site. The Muddy River has two approved TMDLs for pathogens and phosphorous. No areas designated as solid waste facilities (landfills) are located within 0.5 miles of the subject site. A copy of the DEP Priority Resources Map depicting the location of the subject site is included in **Appendix C**.

Based on our review, the subject site is not listed on the MA DEP on-line database of listed DEP release sites.

A review of information provided in an Information for Planning and Conservation Trust Resource Report (IPaC Report) prepared by the U.S. Fish and Wildlife Service for the subject site identified the presence of one (1) threatened species in the vicinity of the discharge location and/or discharge outfall. The report identifies the Northern Long-Eared Bat as a threatened species; however, it is unlikely that the development of new structures will impact the Northern Long-Eared Bat. Further, the IPaC Report did not identify the presence of a critical habitat in the vicinity of the discharge location and/or discharge outfall. Based upon the above, the site is considered a Criterion C pursuant to Appendix IV of the RGP. A copy of the IPaC Report is included in **Appendix C**.

The proposed development parcel is currently a parking lot and is not individually listed on the State and National Register of Historical Places. It is determined that proposed construction will not likely not affect listed historical places and thus construction dewatering that is proposed at the subject site meets the Permit Eligibility Criterion A under the Remediation General Permit. A copy of the database search for the subject site's addresses are included in **Appendix C**.

Construction Site Dewatering

As stated above, construction dewatering by means of temporary localized sumping is anticipated to be sufficient to control groundwater during excavations for proposed building footings. The collected groundwater is anticipated to be discharged off-site due to the floor plan of the proposed excavations and the inability to recharge on-site.

It is anticipated that the maximum rate of construction dewatering will be on the order of 50 gallons per minute (gpm) during proposed deep excavations. This estimate does not include surface run-off which will be removed from the excavation during periods of precipitation.

A review of available subgrade utility plans provided by the Town of Brookline's Engineering Department indicates that stormwater collected within catch basins on Auburn Street adjacent to the subject site flow west beneath Auburn Street to Harvard Street then Brook Street. The flow path crosses beneath Brookline Avenue and eventually discharges into the Muddy River. According to the Town of Brookline, discharge at the subject site outfalls at C400-034 near Brookline Avenue along the Muddy River. An email correspondence with Jay Hersey of the Town of Brookline documenting the discharge outfall is included in **Appendix C**. The locations of the relevant stormwater drains in relation to the subject site are indicated on **Figure 2**. The location of discharge to the Muddy River is shown in plans provided by the Town of Brookline which are included in **Figures 3A & 3B**.

Summary of Groundwater Analysis

In April and May, 2019, McPhail Associates, LLC obtained samples of groundwater from monitoring well B-101 (OW) which is located at the southeastern portion of the subject site. Initially, the groundwater sample that was obtained in April 2019 was submitted to a certified laboratory for analysis for the presence of compounds required under the EPA's Remediation General Permit (RGP) application, including total suspended solids (TSS), total residual chlorine, cyanide, ammonia, chloride, hardness, total recoverable metals as well as dissolved cadmium and lead. The results of the laboratory analysis are summarized in **Table 1**, and laboratory data is included in **Appendix D**.

The results of the laboratory analysis indicated levels of TSS as well as total cadmium, iron, and lead which exceeded the 2002 EPA recommended chronic freshwater human health consumption and/or aquatic life criteria. In addition, the detected concentration of dissolved cadmium exceeded the 2002 EPA recommended chronic freshwater aquatic life criteria based upon the elevated level of TSS detected in the initial groundwater sample,

subsequent samples of groundwater were obtained for the presence of total cadmium, iron and lead. Given that lower concentrations of iron and lead were detected in the subsequent groundwater samples, the presence of these metals are considered attributable to suspended particulates in the groundwater samples. Since a release of cadmium has not been detected at the site and historical information pertaining to the site does not indicate evidence that cadmium was formerly used or stored at the site, the detected concentrations of cadmium in groundwater are considered to be naturally occurring.

Pursuant to Section 4.2.2 of the EPA 2017 RGP, a surface water body sample of the Muddy River was obtained for this application and the results of the laboratory analysis are summarized in **Table 2**, as well as the laboratory data is included in **Appendix E**.

The maximum concentrations of the above referenced constituents that were detected in groundwater were included in the MALimitsBook to further evaluate the application of WQBELs pursuant to Appendix V of the RGP. At the direction of the EPA, a dilution factor of 0 was initially used to calculate the WQBELs for the detected constituents. The results of the calculated indicated that iron and cadmium exceeded the WQBEL criteria. Thus, pursuant to the EPA, an RGP applies for the off-site discharge of construction dewatering during redevelopment at the site. The MALimitsBook Excel worksheet has been attached to the email of this application submittal for your review.

Groundwater Treatment

Based on the results of the above referenced groundwater analyses, it is recommended that that a 5,000-gallon capacity settling tank and bag filters be utilized to settle out suspended particulates in the discharge during construction dewatering to meet applicable effluent limits established by the US EPA prior to off-site discharge. A schematic of the treatment system is shown on **Figure 4**.

Summary and Conclusions

The purpose of this report is to assess site environmental conditions and groundwater data to support the Notice of Intent to discharge construction dewatering for under Massachusetts Remediation General Permit (RGP) during development of the 54 Auburn Street property located in Brookline, Massachusetts.

Based on the results of the above referenced groundwater analyses, it is recommended that treatment of construction dewatering consisting of one 5,000-gallon capacity settling tank and bag filters be utilized to meet the applicable discharge limits of cadmium, iron, and TSS. However, should the effluent monitoring results indicate levels of TSS in excess of the limits established in the Massachusetts RGP, additional mitigative measures will be implemented to meet the allowable discharge limits.

We trust that the above satisfies your present requirements. Should you have any questions or comments concerning the above, please do not hesitate to contact us.

Very truly yours,

McPHAIL ASSOCIATES, LLC

Joseph S. Wold

William J. Burns, L.S.P.

JSW/wjb

N:\Working Documents\Reports\6577_RGP 54 Auburn_101519.docx

FIGURE 1

McPHAIL ASSOCIATES, LLC
Geotechnical and Geoenvironmental Engineers
2269 Massachusetts Avenue
Cambridge, MA 02140
617/868-1420
617/868-1423 (Fax)
www.mcphailgeo.com

N

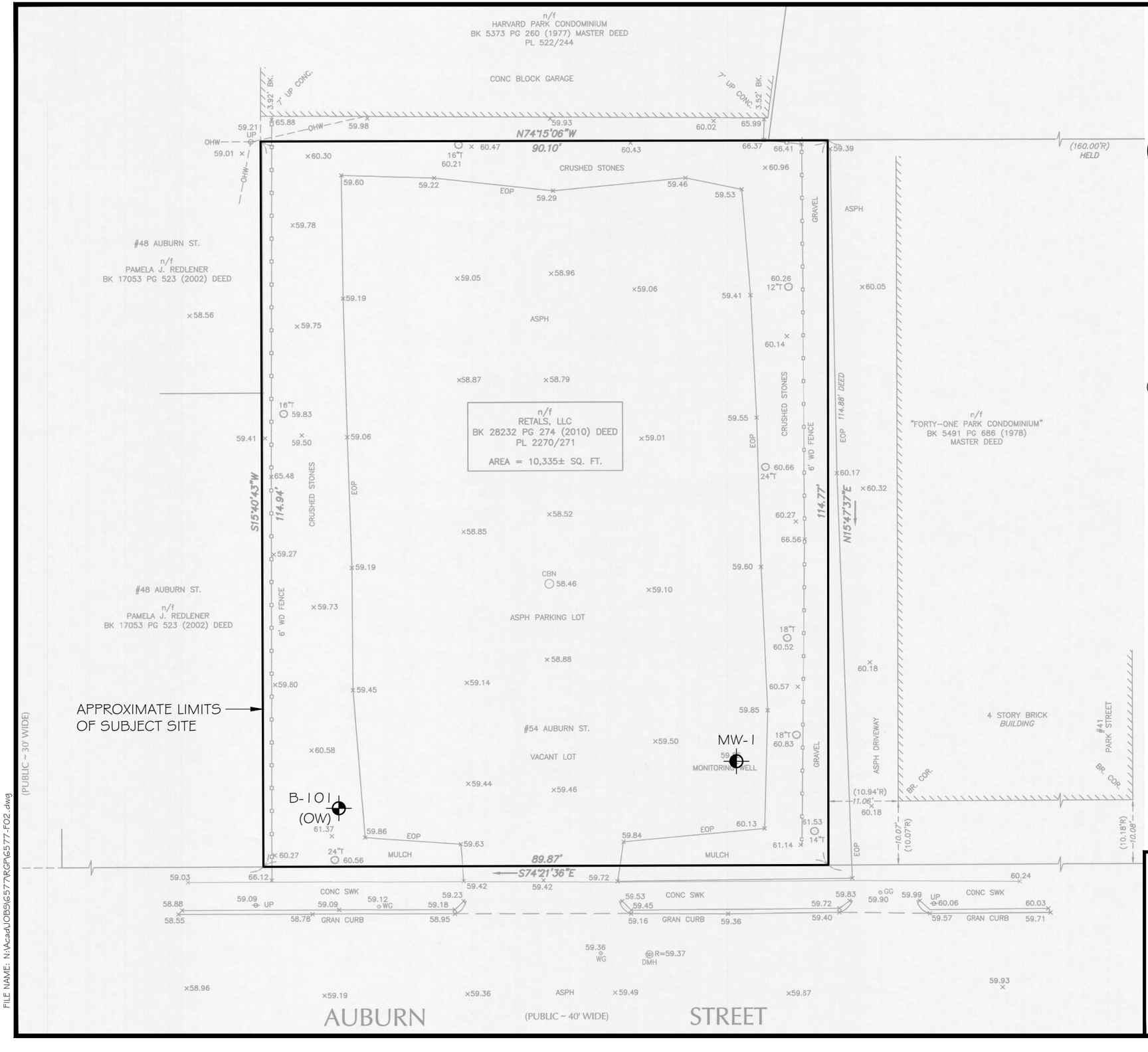
SCALE 1:25,000

PROJECT LOCATION PLAN

54 AUBURN STREET

BROOKLINE MASSACHUSETTS

FIGURE 2



LEGEND

- ⊕ — APPROXIMATE LOCATION OF BOREHOLE PERFORMED BY CARR-DEE CORP. ON APRIL 23, 2018 FOR McPHAIL ASSOCIATES, LLC
- ⊕ — APPROXIMATE LOCATION OF MONITORING WELL PREVIOUSLY INSTALLED BY STANTEC
- (OW) — INDICATES OBSERVATION WELL INSTALLED WITHIN COMPLETED BOREHOLE

REFERENCE: THIS PLAN WAS PREPARED FROM A 10-SCALE DRAWING ENTITLED "TOPOGRAPHIC PLAN OF LAND" DATED FEBRUARY 9, 2016 BY J.F. HENNESSY CO.

GRAPHIC SCALE

16 0 16 32

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54 AUBURN STREET
BROOKLINE MASSACHUSETTS

SITE PLAN

FOR
HIGHLAND DEVELOPMENT, INC.
BY
McPHAIL ASSOCIATES, LLC

Date: OCTOBER 2019	Dwn: I.J.M.	Chkd: J.W.S.	Scale: 1/16" = 1'-0"
Project No: 6577			

FILE NAME: N:\Acad\JOBS\6577\RCP\6577-F02.dwg

FIGURE 3A

APPROXIMATE LIMITS OF SUBJECT SITE

NORTH

REFERENCE: THIS PLAN WAS PREPARED FROM AN 100-SCALE DRAWING ENTITLED "SANITARY SEWER & STORM DRAIN RANGE PLAN" UNDATED PROVIDED BY THE TOWN OF BROOKLINE ENGINEERING DIVISION

GRAPHIC SCALE

120 0 120 240

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54 AUBURN STREET

BROOKLINE MASSACHUSETTS

DISCHARGE FLOW PLAN

FOR

HIGHLAND DEVELOPMENT, INC.

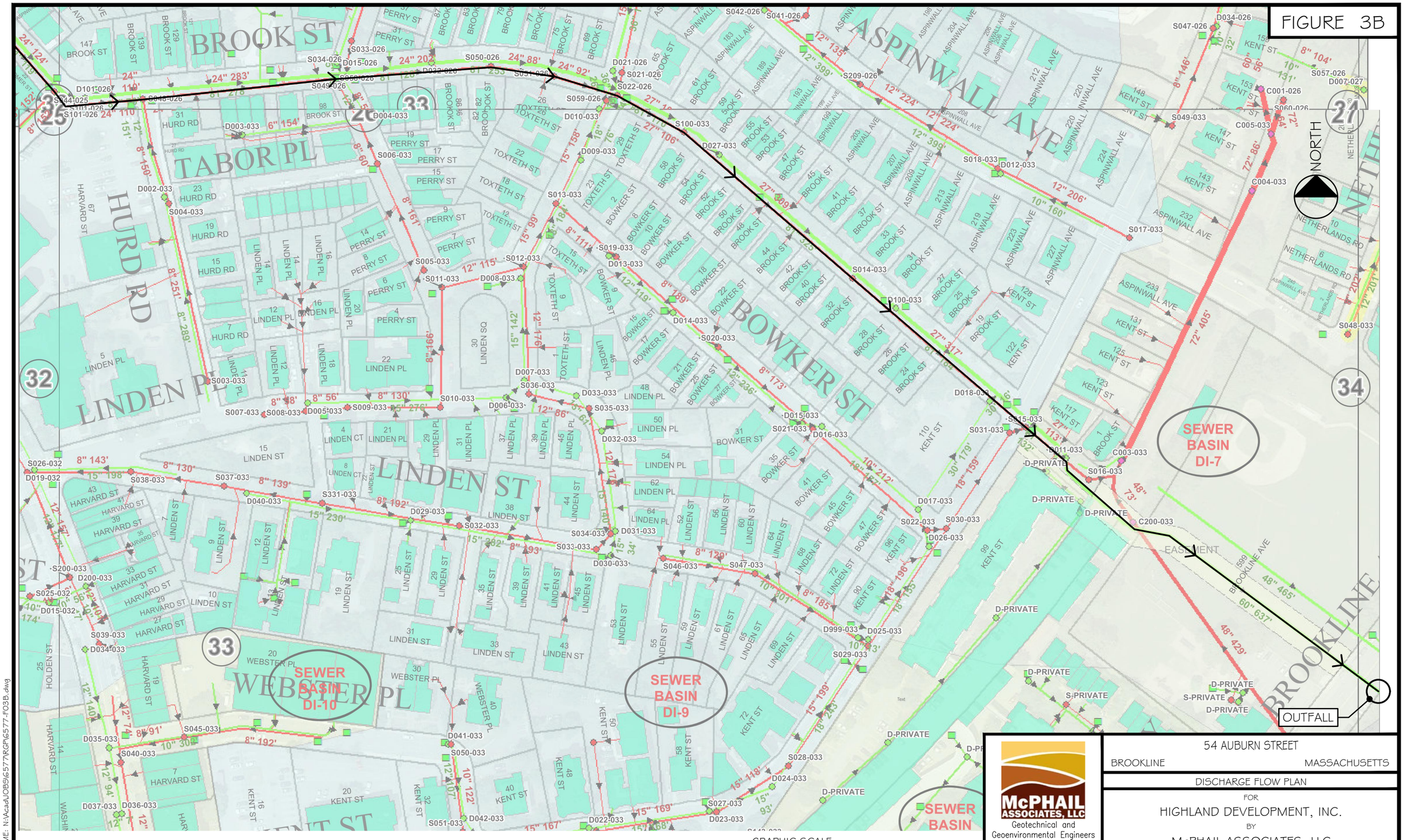
BY

McPHAIL ASSOCIATES, LLC

Date: OCTOBER 2019	Dwn: I.J.M.	Chkd: J.S.W.	Scale: 1" = 120'
Project No: 6577			

FILE NAME: N:\Acad\JOBS\6577\RCP\6577-F03A.dwg

FIGURE 3B



REFERENCE: THIS PLAN WAS PREPARED FROM AN 100-SCALE DRAWING ENTITLED "SANITARY SEWER & STORM DRAIN RANGE PLAN" UNDATED PROVIDED BY THE TOWN OF BROOKLINE ENGINEERING DIVISION

GRAPHIC SCALE

120 0 120 240

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54 AUBURN STREET

BROOKLINE MASSACHUSETTS

DISCHARGE FLOW PLAN

FOR

HIGHLAND DEVELOPMENT, INC.

BY

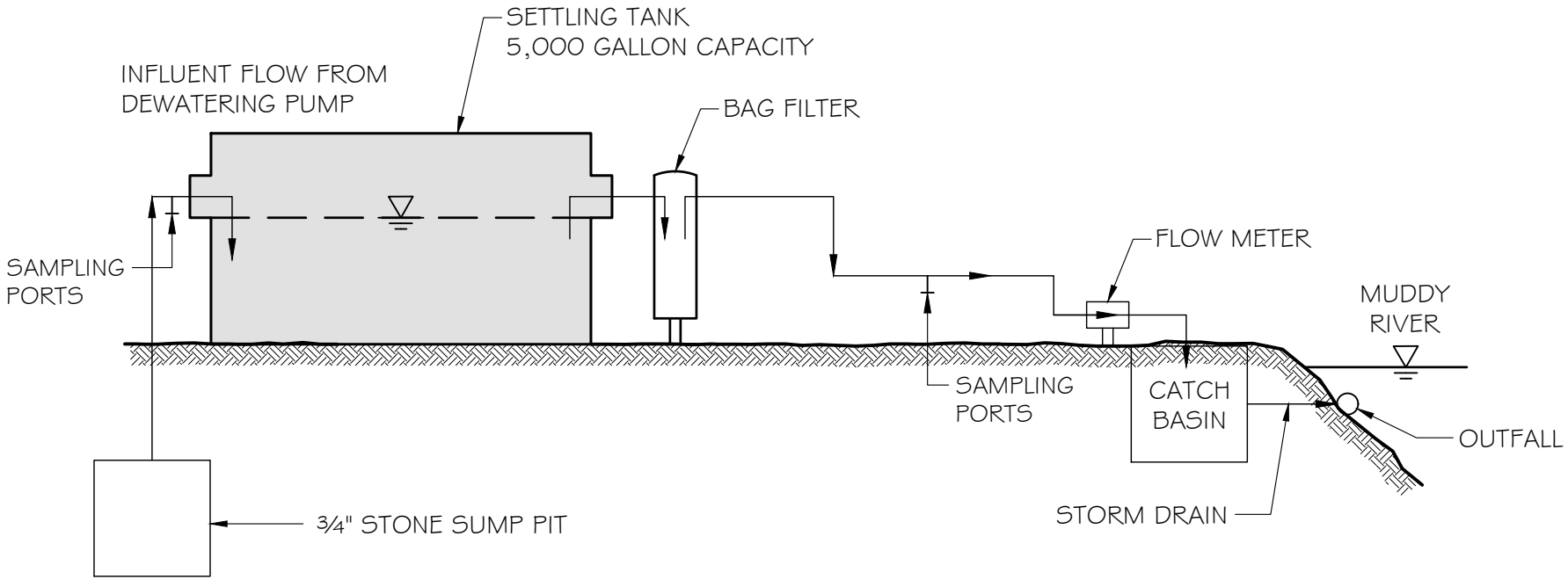
McPHAIL ASSOCIATES, LLC

Date: OCTOBER 2019	Dwn: I.J.M.	Chkd: J.S.W.	Scale: 1" = 120'
Project No: 6577			

FILE NAME: N:\Acad\JOBS\6577\RGP\6577-F03B.dwg

FILE NAME: N:\Acad\JOBS\6577\RGP\6577-F04.dwg

FIGURE 4



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54 AUBURN STREET

BROOKLINE MASSACHUSETTS

SCHEMATIC OF TREATMENT SYSTEM

FOR

HIGHLAND DEVELOPMENT, INC.

BY

McPHAIL ASSOCIATES, LLC

CONSULTING GEOTECHNICAL ENGINEERS

Date: OCTOBER 2019	Dwn: I.J.M.	Chkd: J.S.W.	Scale: N.T.S.
Project No: 6577			

Table 1
Labratory Analytical Results - Groundwater
B-101 (OW)

54 Auburn Street
Project No.6577

LOCATION	2002 EPA - Freshwater Aquatic Life Chronic Criteria	B-101 (OW)	B-101 (OW)	B-101 (OW)	B-101 (OW)
SAMPLING DATE		4/30/2019	4/30/2019	5/13/2019	5/13/2019
LAB SAMPLE ID		L1917807-1	L1918699-01	L1919953-01	L1921135-01
SAMPLE TYPE		Groundwater	Groundwater	Groundwater	Groundwater
General Chemistry (ug/l)					
Chlorine, Total Residual		ND(20)	-	-	-
Chromium, Hexavalent	11	ND(10)	-	-	-
Chromium, Trivalent	74	ND(10)	-	-	-
Cyanide, Total	5.2	ND(5)	-	-	-
Nitrogen, Ammonia		105	-	-	-
pH (SU)		6.2	-	-	-
Solids, Total Suspended		ND(78000)	-	ND(5000)	-
Chloride	230000	1720000	-	-	-
Hardness		493000	-	-	-
Total Metals (ug/l)					
Antimony, Total		ND(4)	-	-	-
Arsenic, Total	150	1.45	-	-	-
Cadmium, Total	0.25	**0.96**	-	-	**1.17**
Chromium, Total		ND(3.12)	-	-	-
Copper, Total		7.67	-	-	-
Iron, Total		3210	-	-	2160
Lead, Total	2.5	**8.74**	-	-	ND(1)
Mercury, Total	0.77	ND(0.2)	-	-	-
Nickel, Total	52	8.85	-	-	-
Selenium, Total	5	ND(5)	-	-	-
Silver, Total		0.94	-	-	-
Zinc, Total	120	20.83	-	-	-
Dissolved Metals (ug/l)					
Cadmium, Dissolved	0.25	-	**0.7**	**0.9**	-
Lead, Dissolved	2.5	-	ND(1)	ND(1)	-

ND - Not detected in excess of the detection limit
(#) - Detection limit
Bold - Dectected above 2002 EPA - Freshwater Aquatic Life Chronic Criteria

Table 2
Labratory Analytical Results - Surface Water
Muddy River

54 Auburn Street
Project No.6577

LOCATION	EPA - Freshwater Aquatic Life Chronic Criteria	Muddy River RGP Sample
SAMPLING DATE		**4/25/2019**
LAB SAMPLE ID		**L1917134-01**
SAMPLE TYPE		**WATER**
General Chemistry (ug/l)		
Nitrogen, Ammonia		259
pH (SU)		6.9
Hardness		133000
Total Metals (ug/l)		
Antimony, Total		ND(4)
Arsenic, Total	150	ND(1)
Cadmium, Total	0.25	ND(0.2)
Chromium, Total		ND(1)
Copper, Total		7.29
Iron, Total	1000	694
Lead, Total	2.5	3.88
Mercury, Total	0.77	ND(0.2)
Nickel, Total	52	ND(2)
Selenium, Total	5	ND(5)
Silver, Total		ND(0.4)
Zinc, Total	120	20.5

ND - Not detected in excess of the detection limit
(#) - Detection limit

APPENDIX A:

LIMITATIONS

LIMITATIONS

The purpose of this report is to present a summary of environmental conditions, including the results of testing of a groundwater sample obtained from a observation well on the 54 Auburn Street property located in Brookline, Massachusetts in support of an application for approval of temporary construction dewatering discharge of groundwater into surface waters of the Commonwealth of Massachusetts under EPA's Massachusetts Remediation General Permit MAG9100000.

The observations were made under the conditions stated in this report. The conclusions presented above were based on these observations. If variations in the nature and extent of subsurface conditions between the spaced subsurface explorations become evident in the future, it will be necessary to re-evaluate the conclusions presented herein after performing on-site observations and noting the characteristics of any variations.

The conclusions submitted in this report are based in part upon laboratory test data obtained from analysis of groundwater samples, and are contingent upon their validity. The data have been reviewed, and interpretations have been made in the text. It should also be noted that fluctuations in the types and levels of contaminants and variations in their flow paths may occur due to changes in seasonal water table, past practices used in disposal and other factors.

Laboratory analyses have been performed for specific constituents during the course of this assessment, as described in the text. However, it should be noted that additional constituents not searched for during the current study may be present in soil and/or groundwater at the site.

This report and application have been prepared on behalf of and for the exclusive use of Highland Development, Inc. This report and the findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party, other than submission to relevant governmental agencies, nor used in whole or in part by any other party without the prior written consent of McPhail Associates, LLC.

APPENDIX B:

NOTICE OF INTENT TRANSMITTAL FORM
NPDES REMEDIATION GENERAL PERMIT

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

A. General site information:

1. Name of site: 54 Auburn Street	Site address: 54 Auburn Street Street:		
	City: Brookline	State: MA	Zip: 02446
2. Site owner 54 Auburn Street LLC	Contact Person: Sam H. Slater		
	Telephone: 617-557-1799	Email: amychabot@tremontllc.com	
	Mailing address: 54 Auburn Street Street:		
Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private ☐ Other; if so, specify:	City: Brookline	State: MA	Zip: 02446
3. Site operator, if different than owner Sea & Shore Contracting, Inc.	Contact Person: Mike Lally		
	Telephone: 781-767-0090	Email: mjl@seaandshorecontracting	
	Mailing address: 11 Randolph Rd Street:		
	City: Randolph	State: MA	Zip: 02368
4. NPDES permit number assigned by EPA: NPDES permit is (check all that apply: ■ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	5. Other regulatory program(s) that apply to the site (check all that apply): ☐ MA Chapter 21e; list RTN(s): ☐ NH Groundwater Management Permit or Groundwater Release Detection Permit:	☐ CERCLA ☐ UIC Program ☐ POTW Pretreatment ☐ CWA Section 404	

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
Muddy River	MA72-11	B

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

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

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

3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP.
Muddy River C400-034 - See Appendix C for further information

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.	.553
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

6. Has the operator received confirmation from the appropriate State for the 7Q10and dilution factor indicated? (check one): ■ Yes ☐ No
If yes, indicate date confirmation received: 07/02/2019

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

C. Source water information:

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

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

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

D. Discharge information

1.The discharge(s) is a(n) (check any that apply): ☐ Existing discharge ■ New discharge ☐ New source	
Outfall(s): Muddy River	Outfall location(s): (Latitude, Longitude) (42.337879 , -71.124052)
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: Discharge indirectly into Muddy River through Brookline Stormdrain system ☐ A private storm sewer system ■ A municipal storm sewer system If the discharge enters the receiving water via a private or municipal storm sewer system: Has notification been provided to the owner of this system? (check one): ■ Yes ☐ No See Appendix B for further information Has the operator has received permission from the owner to use such system for discharges? (check one): ☐ Yes ■ No, if so, explain, with an estimated timeframe for obtaining permission: Upon approval of this NOI Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): ■ Yes ☐ No See Appendix B for further information	
Provide the expected start and end dates of discharge(s) (month/year): Temporary Treatment System (10/2019) through (09/2020) Indicate if the discharge is expected to occur over a duration of: ■ less than 12 months ☐ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

<table>
<tr><td>2. Activity Category: (check all that apply)</td><td colspan="2">3. Contamination Type Category: (check all that apply)</td></tr>
<tr><td rowspan="4">☐ I – Petroleum-Related Site Remediation
☐ II – Non-Petroleum-Related Site Remediation
■ III – Contaminated Site Dewatering
☐ IV – Dewatering of Pipelines and Tanks
☐ V – Aquifer Pump Testing
☐ VI – Well Development/Rehabilitation
☐ VII – Collection Structure Dewatering/Remediation
☐ VIII – Dredge-Related Dewatering</td><td colspan="2">a. If Activity Category I or II: (check all that apply)

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

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

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✓	1	121,4500NH3-BH	75	105	105	Report mg/L	---
Chloride		✓	1	443000	230000	1720000	1720000	Report µg/l	---
Total Residual Chlorine	✓		1	121,4500C	50	<DL	<DL	0.2 mg/L	
Total Suspended Solids	✓		1	1212540D	30000	<DL	<DL	30 mg/L	
Antimony	✓		1	3,200.8	206	<DL	<DL	206 µg/L	
Arsenic		✓	1	3,200.8	10	1.45	1.45	104 µg/L	
Cadmium		✓	1	3,200.8	0.25	1.17	1.17	10.2 µg/L	
Chromium III	✓		1	3,200.8	74	<DL	<DL	323 µg/L	
Chromium VI	✓		1	1,7196A	11	<DL	<DL	323 µg/L	
Copper		✓	1	3,200.8	9	7.67	7.67	242 µg/L	
Iron		✓	1	19,200.7	1000	3.21	3.21	5,000 µg/L	
Lead		✓	1	3,200.8	2.5	8.74	8.74	160 µg/L	
Mercury	✓		1	3,245.1	.77	<DL	<DL	0.739 µg/L	
Nickel		✓	1	3,200.8	52	8.85	8.85	1,450 µg/L	
Selenium	✓		1	3,200.8	5	<DL	<DL	235.8 µg/L	
Silver		✓	1	3,200.8	3.2	.94	.94	35.1 µg/L	
Zinc	✓		1	3,200.8	120	<DL	<DL	420 µg/L	
Cyanide	✓		1	121,4500C	5.2	<DL	<DL	178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX	✓		0					100 µg/L	---
Benzene	✓		0					5.0 µg/L	---
1,4 Dioxane	✓		0					200 µg/L	---
Acetone	✓		0					7.97 mg/L	---
Phenol	✓		0					1,080 µg/L	

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
C. Halogenated VOCs									
Carbon Tetrachloride	✓		0					4.4 µg/L	
1,2 Dichlorobenzene	✓		0					600 µg/L	---
1,3 Dichlorobenzene	✓		0					320 µg/L	---
1,4 Dichlorobenzene	✓		0					5.0 µg/L	---
Total dichlorobenzene	✓		0					763 µg/L in NH	---
1,1 Dichloroethane	✓		0					70 µg/L	---
1,2 Dichloroethane	✓		0					5.0 µg/L	---
1,1 Dichloroethylene	✓		0					3.2 µg/L	---
Ethylene Dibromide	✓		0					0.05 µg/L	---
Methylene Chloride	✓		0					4.6 µg/L	---
1,1,1 Trichloroethane	✓		0					200 µg/L	---
1,1,2 Trichloroethane	✓		0					5.0 µg/L	---
Trichloroethylene	✓		0					5.0 µg/L	---
Tetrachloroethylene	✓		0					5.0 µg/L	
cis-1,2 Dichloroethylene	✓		0					70 µg/L	---
Vinyl Chloride	✓		0					2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✓		0					190 µg/L	
Diethylhexyl phthalate	✓		0					101 µg/L	
Total Group I PAHs	✓		0					1.0 µg/L	---
Benzo(a)anthracene	✓		0					As Total PAHs	
Benzo(a)pyrene	✓		0						
Benzo(b)fluoranthene	✓		0						
Benzo(k)fluoranthene	✓		0						
Chrysene	✓		0						
Dibenzo(a,h)anthracene	✓		0						
Indeno(1,2,3-cd)pyrene	✓		0						

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
Total Group II PAHs	✓		0					100 µg/L	---
Naphthalene	✓		0					20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✓		0					0.000064 µg/L	---
Pentachlorophenol	✓		0					1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✓		0					5.0 mg/L	---
Ethanol	✓		0					Report mg/L	---
Methyl-tert-Butyl Ether	✓		0					70 µg/L	
tert-Butyl Alcohol	✓		0					120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✓		0					90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC_{50}, additional pollutants present); if so, specify:									
pH - Influent		✓	1	121,4500H		6.2	6.2		
Hardness		✓	1	19,200.7		493	493		
Temp - Influent		✓	1			12.84 C			
pH - Receiving Water		✓	1	121,4500H		6.9	6.9		
Hardness		✓		19,200.7		133	133		
Temp - Receiving Water		✓	1			11.68 C			
Influent Dissolved Cadmium		✓	1	3,200.8	.2	.9	.9		
Influent Dissolved Lead	✓		1	3,200.8	1	<DL	<DL		

E. Treatment system information

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

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

2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge.
Settling tank and bag filters

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

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

3. Provide the **design flow capacity** in gallons per minute (gpm) of the most limiting component. Indicate the most limiting component: Frac Tank Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	50
Provide the proposed maximum effluent flow in gpm.	50
Provide the average effluent flow in gpm.	25
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	

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

F. Chemical and additive information

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

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

n/a

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

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

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

G. Endangered Species Act eligibility determination

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

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

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

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

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

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

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

H. National Historic Preservation Act eligibility determination

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

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

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

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

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

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

I. Supplemental information

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

NMFS Supporting Information

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

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

J. Certification requirement

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

BMPP certification statement: A BMPP Statement has been implemented in accordance with good engineering practices following Part 2.5 of the RGP.

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: 10/1/19

Print Name and Title: Mike Lally President

APPENDIX C:

MASSACHUSETTS PHASE I SITE ASSESSMENT GIS MAP, IPAC TRUST RESOURCE REPORT, AND MACRIS REPORT

MassDEP - Bureau of Waste Site Cleanup

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

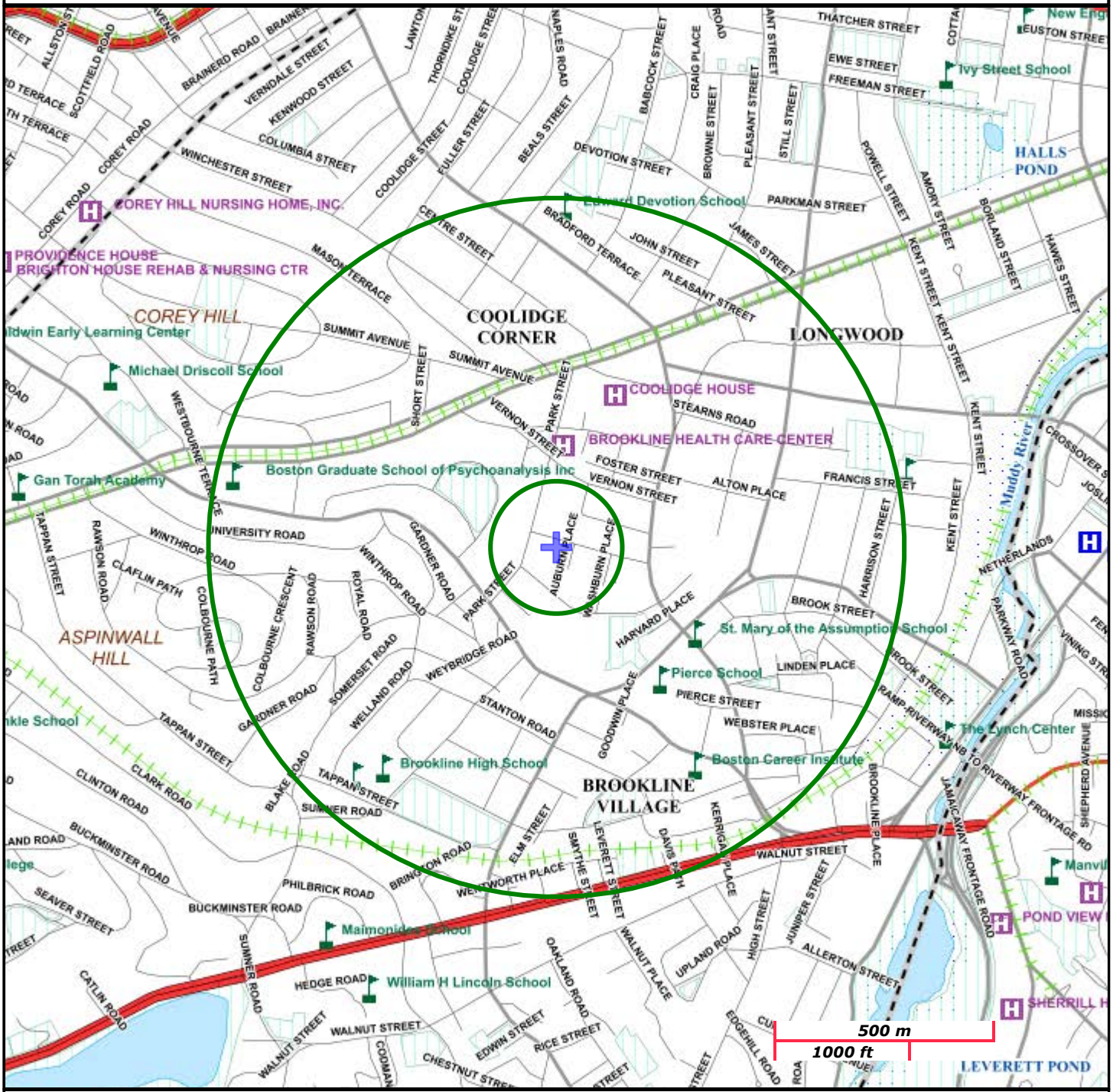
Site Information:

54 AUBURN STREET BROOKLINE, MA

NAD83 UTM Meters:
4689456mN , 325018mE (Zone: 19)
April 26, 2019

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

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

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

Aquifers: Medium Yield, High Yield, EPA Sole Source

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

PWS Protection Areas: Zone II, IWPA, Zone A

Hydrography: Open Water, PWS Reservoir, Tidal Flat

Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

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

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

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:
Consultation Code: 05E1NE00-2019-SLI-1535
Event Code: 05E1NE00-2019-E-03716
Project Name: 54 Auburn Street

April 26, 2019

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

To Whom It May Concern:

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

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

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

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

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

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

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

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

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

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

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

Project Summary

Consultation Code: 05E1NE00-2019-SLI-1535

Event Code: 05E1NE00-2019-E-03716

Project Name: 54 Auburn Street

Project Type: DEVELOPMENT

Project Description: <1 Acre

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.337671977537006N71.12409092182668W

Counties: Norfolk, MA

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

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

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

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

---

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

Mammals

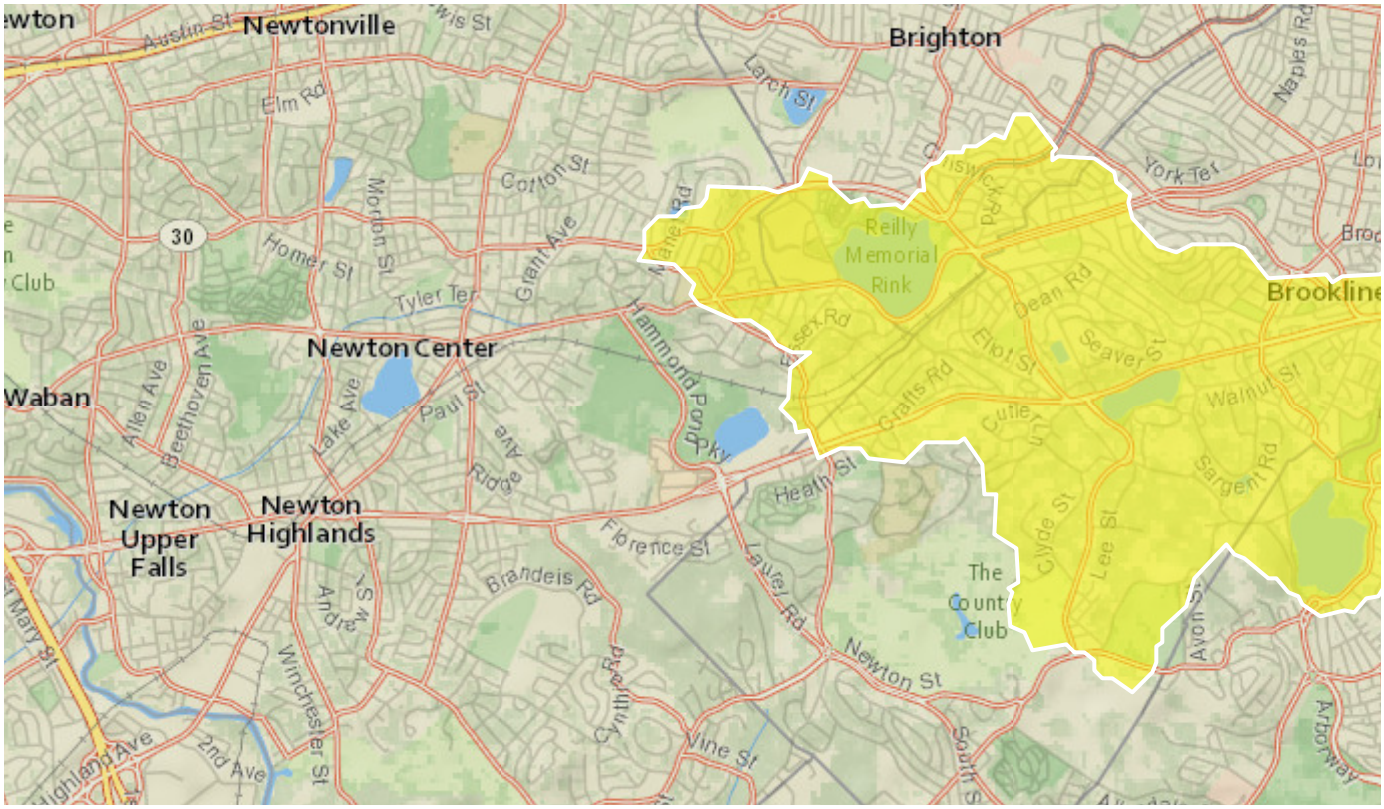
NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

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

%4 Auburn Street StreamStats Report

Region ID: MA
Workspace ID: MA20190426123509782000
Clicked Point (Latitude, Longitude): 42.33390, -71.11242
Time: 2019-04-26 08:35:25 -0400



< 1 Acre

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	4.71	square miles
BSLDEM250	Mean basin slope computed from 1:250K DEM	3.281	percent
DRFTPERSTR	Area of stratified drift per unit of stream length	0.56	square mile per mile
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	4.71	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	3.281	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	0.56	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1

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

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PII	PIu	SE	SEp
7 Day 2 Year Low Flow	0.964	ft^3/s	0.217	4.12	49.5	49.5
7 Day 10 Year Low Flow	0.553	ft^3/s	0.101	2.82	70.8	70.8

Low-Flow Statistics Citations

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

Application Version: 4.3.0

APPENDIX D:

GROUNDWATER LABORATORY ANALYTICAL DATA

ANALYTICAL REPORT

Lab Number:	L1917807
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	54 AUBURN STREET
Project Number:	6577.2.01
Report Date:	05/06/19

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: 54 AUBURN STREET
Project Number: 6577.2.01

Lab Number: L1917807
Report Date: 05/06/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1917807-01	B-101 (OW)	WATER	BROOKLINE, MA	04/30/19 12:00	04/30/19

Project Name:	54 AUBURN STREET	**Lab Number:**	L1917807
Project Number:	6577.2.01	**Report Date:**	05/06/19

Case Narrative

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

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

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

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

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

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

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: Kelly Stenstrom

Title: Technical Director/Representative Date: 05/06/19

METALS

Project Name: 54 AUBURN STREET
Project Number: 6577.2.01
Lab Number: L1917807
Report Date: 05/06/19

SAMPLE RESULTS

Lab ID: L1917807-01
Client ID: B-101 (OW)
Sample Location: BROOKLINE, MA
Date Collected: 04/30/19 12:00
Date Received: 04/30/19
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	05/02/19 17:38	05/03/19 11:21	EPA 3005A	3,200.8	AM
Arsenic, Total	0.00145		mg/l	0.00100	--	1	05/02/19 17:38	05/03/19 11:21	EPA 3005A	3,200.8	AM
Cadmium, Total	0.00096		mg/l	0.00020	--	1	05/02/19 17:38	05/03/19 11:21	EPA 3005A	3,200.8	AM
Chromium, Total	0.00312		mg/l	0.00100	--	1	05/02/19 17:38	05/03/19 11:21	EPA 3005A	3,200.8	AM
Copper, Total	0.00767		mg/l	0.00100	--	1	05/02/19 17:38	05/03/19 11:21	EPA 3005A	3,200.8	AM
Iron, Total	3.21		mg/l	0.050	--	1	05/02/19 17:38	05/03/19 14:26	EPA 3005A	19,200.7	LC
Lead, Total	0.00874		mg/l	0.00100	--	1	05/02/19 17:38	05/03/19 11:21	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	05/01/19 14:43	05/03/19 14:05	EPA 245.1	3,245.1	GD
Nickel, Total	0.00885		mg/l	0.00200	--	1	05/02/19 17:38	05/03/19 11:21	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	05/02/19 17:38	05/03/19 11:21	EPA 3005A	3,200.8	AM
Silver, Total	0.00094		mg/l	0.00040	--	1	05/02/19 17:38	05/03/19 11:21	EPA 3005A	3,200.8	AM
Zinc, Total	0.02083		mg/l	0.01000	--	1	05/02/19 17:38	05/03/19 11:21	EPA 3005A	3,200.8	AM
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	493		mg/l	0.660	NA	1	05/02/19 17:38	05/03/19 14:26	EPA 3005A	19,200.7	LC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		05/03/19 11:21	NA	107,-	

Project Name: 54 AUBURN STREET **Lab Number:** L1917807

Project Number: 6577.2.01 **Report Date:** 05/06/19

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: WG1232430-1										
Mercury, Total	ND		mg/l	0.00020	--	1	05/01/19 14:43	05/03/19 13:54	3,245.1	GD

Prep Information

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1232826-1										
Antimony, Total	ND		mg/l	0.00400	--	1	05/02/19 17:38	05/03/19 09:13	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	05/02/19 17:38	05/03/19 09:13	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	05/02/19 17:38	05/03/19 09:13	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	05/02/19 17:38	05/03/19 09:13	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	05/02/19 17:38	05/03/19 09:13	3,200.8	AM
Lead, Total	ND		mg/l	0.00100	--	1	05/02/19 17:38	05/03/19 09:13	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	--	1	05/02/19 17:38	05/03/19 09:13	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	05/02/19 17:38	05/03/19 09:13	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	05/02/19 17:38	05/03/19 09:13	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	05/02/19 17:38	05/03/19 09:13	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: WG1232842-1										
Iron, Total	ND		mg/l	0.050	--	1	05/02/19 17:38	05/03/19 10:07	19,200.7	LC

Prep Information

Digestion Method: EPA 3005A

Project Name: 54 AUBURN STREET
Project Number: 6577.2.01
Lab Number: L1917807
Report Date: 05/06/19

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: WG1232842-1										
Hardness	ND		mg/l	0.660	NA	1	05/02/19 17:38	05/03/19 10:07	19,200.7	LC

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: 54 AUBURN STREET

Project Number: 6577.2.01

Lab Number: L1917807

Report Date: 05/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1232430-2								
Mercury, Total	104		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1232826-2								
Antimony, Total	115		-		85-115	-		
Arsenic, Total	101		-		85-115	-		
Cadmium, Total	100		-		85-115	-		
Chromium, Total	100		-		85-115	-		
Copper, Total	95		-		85-115	-		
Lead, Total	102		-		85-115	-		
Nickel, Total	99		-		85-115	-		
Selenium, Total	103		-		85-115	-		
Silver, Total	97		-		85-115	-		
Zinc, Total	103		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1232842-2								
Iron, Total	94		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1232842-2								
Hardness	96		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 54 AUBURN STREET
Project Number: 6577.2.01

Lab Number: L1917807
Report Date: 05/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232430-3 QC Sample: L1917708-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00501	100		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232826-3 QC Sample: L1917791-04 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.4994	100		-	-		70-130	-		20
Arsenic, Total	ND	0.12	0.1260	105		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.05185	102		-	-		70-130	-		20
Chromium, Total	ND	0.2	0.2018	101		-	-		70-130	-		20
Copper, Total	ND	0.25	0.2445	98		-	-		70-130	-		20
Lead, Total	ND	0.51	0.5335	105		-	-		70-130	-		20
Nickel, Total	0.00532	0.5	0.5150	102		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1193	99		-	-		70-130	-		20
Silver, Total	ND	0.05	0.04739	95		-	-		70-130	-		20
Zinc, Total	ND	0.5	0.5293	106		-	-		70-130	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: 54 AUBURN STREET
Project Number: 6577.2.01

Lab Number: L1917807
Report Date: 05/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232826-5 QC Sample: L1917731-01 Client ID: MS Sample									
Antimony, Total	ND	0.5	0.5547	111	-	-	70-130	-	20
Arsenic, Total	0.0024	0.12	0.1322	108	-	-	70-130	-	20
Cadmium, Total	ND	0.051	0.05565	109	-	-	70-130	-	20
Chromium, Total	ND	0.2	0.2054	103	-	-	70-130	-	20
Copper, Total	0.0163	0.25	0.2734	103	-	-	70-130	-	20
Lead, Total	ND	0.51	0.5453	107	-	-	70-130	-	20
Nickel, Total	ND	0.5	0.5219	104	-	-	70-130	-	20
Selenium, Total	ND	0.12	0.1191	99	-	-	70-130	-	20
Silver, Total	ND	0.05	0.05106	102	-	-	70-130	-	20
Zinc, Total	0.0262	0.5	0.5761	110	-	-	70-130	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232842-3 QC Sample: L1917791-04 Client ID: MS Sample									
Iron, Total	ND	1	0.929	93	-	-	75-125	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232842-3 QC Sample: L1917791-04 Client ID: MS Sample									
Hardness	125	66.2	182	86	-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232842-7 QC Sample: L1917731-01 Client ID: MS Sample									
Iron, Total	0.056	1	1.10	104	-	-	75-125	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232842-7 QC Sample: L1917731-01 Client ID: MS Sample									
Hardness	184	66.2	256	109	-	-	75-125	-	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: 54 AUBURN STREET
Project Number: 6577.2.01

Lab Number: L1917807
Report Date: 05/06/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232430-4 QC Sample: L1917708-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232826-4 QC Sample: L1917791-04 Client ID: DUP Sample						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	ND	ND	mg/l	NC		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	ND	ND	mg/l	NC		20
Copper, Total	ND	ND	mg/l	NC		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	0.00532	0.00475	mg/l	11		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232826-6 QC Sample: L1917731-01 Client ID: DUP Sample						
Lead, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232842-4 QC Sample: L1917791-04 Client ID: DUP Sample						
Iron, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232842-8 QC Sample: L1917731-01 Client ID: DUP Sample						
Iron, Total	0.056	0.064	mg/l	14		20

INORGANICS
&
MISCELLANEOUS

Project Name: 54 AUBURN STREET
Project Number: 6577.2.01

Lab Number: L1917807
Report Date: 05/06/19

SAMPLE RESULTS

Lab ID: L1917807-01
Client ID: B-101 (OW)
Sample Location: BROOKLINE, MA

Date Collected: 04/30/19 12:00
Date Received: 04/30/19
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 Suspended	78.		mg/l	5.0	NA	1	-	05/01/19 16:30	121,2540D	DR
Cyanide, Total	ND		mg/l	0.005	--	1	05/01/19 10:25	05/01/19 13:45	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	05/01/19 05:15	121,4500CL-D	MA
pH (H)	6.2		SU	-	NA	1	-	05/01/19 06:14	121,4500H+-B	JW
Nitrogen, Ammonia	0.105		mg/l	0.075	--	1	05/01/19 17:06	05/01/19 22:04	121,4500NH3-BH	AT
Chromium, Hexavalent	ND		mg/l	0.010	--	1	05/01/19 02:45	05/01/19 03:13	1,7196A	MA
Anions by Ion Chromatography - Westborough Lab										
Chloride	1720		mg/l	25.0	--	50	-	05/01/19 20:06	44,300.0	AU

Project Name: 54 AUBURN STREET
Project Number: 6577.2.01
Lab Number: L1917807
Report Date: 05/06/19

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: WG1232170-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	05/01/19 02:45	05/01/19 03:12	1,7196A	MA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1232240-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	05/01/19 05:15	121,4500CL-D	MA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1232300-1										
Cyanide, Total	ND		mg/l	0.005	--	1	05/01/19 10:25	05/01/19 13:29	121,4500CN-CE	LH
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1232350-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	05/01/19 17:06	05/01/19 21:51	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1232360-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	05/01/19 16:30	121,2540D	DR
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1232604-1										
Chloride	ND		mg/l	0.500	--	1	-	05/01/19 16:54	44,300.0	AU

Lab Control Sample Analysis

Batch Quality Control

Project Name: 54 AUBURN STREET
Project Number: 6577.2.01

Lab Number: L1917807
Report Date: 05/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1232170-2								
Chromium, Hexavalent	96		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1232214-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1232240-2								
Chlorine, Total Residual	92		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1232300-2								
Cyanide, Total	98		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1232350-2								
Nitrogen, Ammonia	102		-		80-120	-		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1232604-2								
Chloride	98		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 54 AUBURN STREET
Project Number: 6577.2.01

Lab Number: L1917807
Report Date: 05/06/19

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: WG1232170-4 QC Sample: L1917807-01 Client ID: B-101 (OW)												
Chromium, Hexavalent	ND	0.1	0.097	97		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1232240-4 QC Sample: L1917688-04 Client ID: MS Sample												
Chlorine, Total Residual	ND	0.25	0.30	120		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1232300-4 QC Sample: L1917660-02 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.178	**89**	Q	-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1232350-4 QC Sample: L1917500-02 Client ID: MS Sample												
Nitrogen, Ammonia	0.234	4	3.50	82		-	-		80-120	-		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1232604-3 QC Sample: L1917791-04 Client ID: MS Sample												
Chloride	45.4	4	47.8	**59**	Q	-	-		90-110	-		18

Lab Duplicate Analysis
Batch Quality Control

Project Name: 54 AUBURN STREET
Project Number: 6577.2.01

Lab Number: L1917807
Report Date: 05/06/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1232170-3 QC Sample: L1917807-01 Client ID: B-101 (OW)						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1232214-2 QC Sample: L1917807-01 Client ID: B-101 (OW)						
pH (H)	6.2	6.1	SU	2		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1232240-3 QC Sample: L1917688-05 Client ID: DUP Sample						
Chlorine, Total Residual	0.55	0.58	mg/l	5		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1232300-3 QC Sample: L1917660-01 Client ID: DUP Sample						
Cyanide, Total	ND	ND	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1232350-3 QC Sample: L1917500-02 Client ID: DUP Sample						
Nitrogen, Ammonia	0.234	0.212	mg/l	10		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1232360-2 QC Sample: L1917717-02 Client ID: DUP Sample						
Solids, Total Suspended	72	72	mg/l	0		29
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1232604-4 QC Sample: L1917791-04 Client ID: DUP Sample						
Chloride	45.4	45.6	mg/l	0		18

Project Name: 54 AUBURN STREET
Project Number: 6577.2.01

Lab Number: L1917807
Report Date: 05/06/19

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(*)
L1917807-01A	Plastic 250ml H2SO4 preserved	A	<2	<2	3.6	Y	Absent		NH3-4500(28)
L1917807-01B	Plastic 250ml HNO3 preserved	A	<2	<2	3.6	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)
L1917807-01C	Plastic 250ml NaOH preserved	A	>12	>12	3.6	Y	Absent		TCN-4500(14)
L1917807-01D	Plastic 950ml unpreserved	A	7	7	3.6	Y	Absent		CL-300(28),HEXCR-7196(1),TRC-4500(1),PH-4500(.01)
L1917807-01E	Plastic 950ml unpreserved	A	7	7	3.6	Y	Absent		TSS-2540(7)

*Values in parentheses indicate holding time in days

Project Name:	54 AUBURN STREET	**Lab Number:**	L1917807
Project Number:	6577.2.01	**Report Date:**	05/06/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

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

Report Format: Data Usability Report

Project Name:	54 AUBURN STREET	**Lab Number:**	L1917807
Project Number:	6577.2.01	**Report Date:**	05/06/19

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.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

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

Data Qualifiers

A - Spectra identified as "Aldol 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.

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

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

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

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

Project Name:	54 AUBURN STREET	**Lab Number:**	L1917807
Project Number:	6577.2.01	**Report Date:**	05/06/19

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.

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.

107 Alpha Analytical - In-house calculation method.

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 624/624.1: 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 6860: SCM: Perchlorate

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

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

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

Westborough Facility:

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

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

Mansfield Facility:

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

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

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

CHAIN OF CUSTODY

PAGE OF

ALPHA ANALYTICAL
World Class Chemistry

Date Rec'd in Lab: 4/30/19

ALPHA Job #: L1917807

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client: McPhail Associates, LLC

Address: 2269 Massachusetts Avenue

Cambridge, MA 02140

Phone: (617) 868-1420

Fax:

Email: Kseaman@mcphailgeo.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: 54 Auburn Street

Project Location: Brookline, MA

Project #: 6577.2.01

Project Manager: KWS

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
NPDES RGP	

Other Project Specific Requirements/Comments/Detection Limits:

Circle the following if required:

SALINITY HARDNESS PH

Sect. A inorganics: Ammonia, Chloride, TRC,TSS,CrVI,CrIII, Tot-CN, RGP Metals

B- Non-Hal- VOC- 8260, 8260-SIM, Tot. Phenol Sect C- VOC- 8260 & 504

D: 8270/8270-SIM: E- PCB's, PCP(8270/8270-SIM): F-TPH, 8260, Sub-Ethanol

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	RGP Metals (200.8) (A)	TSS- (A)	Ammonia (4500 (A))	TCN (A)	CrVI,CrIII,		ph/ Hardness						Sample Specific Comments	TOTAL # BOTTLES
17807-01	B-101(OW)	4/30/19	12:00	GW	ZD	☒	☒	☒	☒	☒	☐	☒	☐	☐	☐	☐	☐		5
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
				Container Type		P	P	P	P	P	-	P	-	-	-	-	-		
				Preservative		C	A	D	E	A	-	A	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
Zachary [signature]	4/30 13:00	[signature] AAL	4/30/19 1630
[signature]	4/30/19 1750	[signature]	4/30/19 17:50

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

FORM NO: 01-01(I-NJ) (rev. 5-JAN-12)

ANALYTICAL REPORT

Lab Number:	L1918699
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	54 AUBURN STREET
Project Number:	6577.2.01
Report Date:	05/10/19

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: 54 AUBURN STREET
Project Number: 6577.2.01

Lab Number: L1918699
Report Date: 05/10/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1918699-01	B-101 (OW)	WATER	BROOKLINE, MA	04/30/19 12:00	04/30/19

Project Name:	54 AUBURN STREET	**Lab Number:**	L1918699
Project Number:	6577.2.01	**Report Date:**	05/10/19

Case Narrative

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

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

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

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

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

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

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: Kelly Stenstrom

Title: Technical Director/Representative Date: 05/10/19

METALS

Project Name: 54 AUBURN STREET
Project Number: 6577.2.01
Lab Number: L1918699
Report Date: 05/10/19

SAMPLE RESULTS

Lab ID: L1918699-01
Client ID: B-101 (OW)
Sample Location: BROOKLINE, MA
Sample Depth:
Matrix: Water

Date Collected: 04/30/19 12:00
Date Received: 04/30/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Cadmium, Dissolved	0.0007		mg/l	0.0002	--	1	05/09/19 13:02	05/10/19 10:38	EPA 3005A	3,200.8	AM
Lead, Dissolved	ND		mg/l	0.0010	--	1	05/09/19 13:02	05/10/19 10:38	EPA 3005A	3,200.8	AM

Project Name: 54 AUBURN STREET
Project Number: 6577.2.01
Lab Number: L1918699
Report Date: 05/10/19

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: WG1235369-1										
Cadmium, Dissolved	ND		mg/l	0.0002	--	1	05/09/19 13:02	05/10/19 10:08	3,200.8	AM
Lead, Dissolved	ND		mg/l	0.0010	--	1	05/09/19 13:02	05/10/19 10:08	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: 54 AUBURN STREET

Project Number: 6577.2.01

Lab Number: L1918699

Report Date: 05/10/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1235369-2								
Cadmium, Dissolved	109		-		85-115	-		
Lead, Dissolved	103		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 54 AUBURN STREET
Project Number: 6577.2.01

Lab Number: L1918699
Report Date: 05/10/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1235369-3 QC Sample: L1918699-01 Client ID: B-101 (OW)												
Cadmium, Dissolved	0.0007	0.051	0.0554	107		-	-		70-130	-		20
Lead, Dissolved	ND	0.51	0.5274	103		-	-		70-130	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 54 AUBURN STREET

Project Number: 6577.2.01

Lab Number: L1918699

Report Date: 05/10/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1235369-4 QC Sample: L1918699-01 Client ID: B-101 (OW)						
Cadmium, Dissolved	0.0007	0.0007	mg/l	1		20
Lead, Dissolved	ND	ND	mg/l	NC		20

Project Name: 54 AUBURN STREET
Project Number: 6577.2.01

Lab Number: L1918699
Report Date: 05/10/19

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(*)
L1918699-01A	Plastic 950ml unpreserved	A	7	7	3.6	Y	Absent		-
L1918699-01X	Plastic 120ml HNO3 preserved Filtrates	A	NA		3.6	Y	Absent		PB-2008S(180),CD-2008S(180)

*Values in parentheses indicate holding time in days

Project Name:	54 AUBURN STREET	**Lab Number:**	L1918699
Project Number:	6577.2.01	**Report Date:**	05/10/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

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

Report Format: Data Usability Report

Project Name:	54 AUBURN STREET	**Lab Number:**	L1918699
Project Number:	6577.2.01	**Report Date:**	05/10/19

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.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

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

Data Qualifiers

A - Spectra identified as "Aldol 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.

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

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

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

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

Project Name:	54 AUBURN STREET	**Lab Number:**	L1918699
Project Number:	6577.2.01	**Report Date:**	05/10/19

REFERENCES

3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
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 6860: SCM: Perchlorate

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

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

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

Westborough Facility:

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

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

Mansfield Facility:

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

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

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

L1918699 JM 5/6/19

CHAIN OF COUSTODY

PAGE OF

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 4/30/19

ALPHA Job #: ~~L1917807~~

Project Information

Project Name: 54 Auburn Street

Project Location: Brookline, MA

Project #: 6577.2.01

Project Manager: KWS

ALPHA Quote #:

Client Information

Client: McPhail Associates, LLC

Address: 2269 Massachusetts Avenue

Cambridge, MA 02140

Phone: (617) 868-1420

Fax:

Email: Kseaman@mcphailgeo.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
NPDES RGP	

Other Project Specific Requirements/Comments/Detection Limits:

Circle the following if required:

SALINITY (HARDNESS PH)

(Sect. A inorganics: Ammonia, Chloride, TRC,TSS,CrVI,CrIII, Tot-CN, RGP Metals)

B- Non-Hal- VOC- 8260, 8260-SIM, Tot. Phenol Sect C- VOC- 8260 & 504

D: 8270/8270-SIM: E- PCB's, PCP(8270/8270-SIM): F-TPH, 8260, Sub-Ethanol

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	RGP Metals (200.8/7A)	TSS (A)	Ammonia (4500 NH3)	TCN (A)	CrVI, CrIII		pH Hardness		PREPS- Cd, Pb				Sample Specific Comments	TOTAL # BOTTLES
~~07807~~-01 18699-	B-101 (OW)	4/29/19	12:00	GW	ZP	☒	☒	☒	☒	☒	☐	☒	☐	☒	☐	☐	☐		5
Container Type						P	P	P	P	P	-	P	-	-	-	-	-		
Preservative						C	A	D	E	A	-	A	-	-	-	-	-		

SAMPLE HANDLING

Filtration

☐ Done

☐ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
Zachary [signature]	4/30 13:00	[signature] AAL	4/30/19 1630
[signature]	4/30/19 1750	[signature]	4/30/19 17:50

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

FORM NO: 01-01(I-NJ) (rev. 5-JAN-12)

ANALYTICAL REPORT

Lab Number:	L1919953
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	54 AUBURN STREET
Project Number:	6577
Report Date:	05/17/19

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: 54 AUBURN STREET
Project Number: 6577

Lab Number: L1919953
Report Date: 05/17/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1919953-01	B-101 (OW)	WATER	BROOKLINE, MA	05/13/19 12:30	05/13/19

Project Name:	54 AUBURN STREET	**Lab Number:**	L1919953
Project Number:	6577	**Report Date:**	05/17/19

Case Narrative

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

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

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

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

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

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

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: 05/17/19

METALS

Project Name: 54 AUBURN STREET
Lab Number: L1919953
Project Number: 6577
Report Date: 05/17/19

SAMPLE RESULTS

Lab ID: L1919953-01
Client ID: B-101 (OW)
Sample Location: BROOKLINE, MA
Date Collected: 05/13/19 12:30
Date Received: 05/13/19
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
Dissolved Metals - Mansfield Lab											
Cadmium, Dissolved	0.0009		mg/l	0.0002	--	1	05/15/19 16:18	05/16/19 14:44	EPA 3005A	3,200.8	AM
Lead, Dissolved	ND		mg/l	0.0010	--	1	05/15/19 16:18	05/16/19 14:44	EPA 3005A	3,200.8	AM

Project Name: 54 AUBURN STREET
Project Number: 6577
Lab Number: L1919953
Report Date: 05/17/19

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: WG1237514-1										
Cadmium, Dissolved	ND		mg/l	0.0002	--	1	05/15/19 16:18	05/16/19 14:28	3,200.8	AM
Lead, Dissolved	ND		mg/l	0.0010	--	1	05/15/19 16:18	05/16/19 14:28	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: 54 AUBURN STREET

Project Number: 6577

Lab Number: L1919953

Report Date: 05/17/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1237514-2								
Cadmium, Dissolved	106		-		85-115	-		
Lead, Dissolved	111		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 54 AUBURN STREET
Project Number: 6577

Lab Number: L1919953
Report Date: 05/17/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1237514-3 QC Sample: L1919953-01 Client ID: B-101 (OW)												
Cadmium, Dissolved	0.0009	0.051	0.0541	104		-	-		70-130	-		20
Lead, Dissolved	ND	0.51	0.5490	108		-	-		70-130	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 54 AUBURN STREET

Project Number: 6577

Lab Number: L1919953

Report Date: 05/17/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1237514-4 QC Sample: L1919953-01 Client ID: B-101 (OW)						
Cadmium, Dissolved	0.0009	0.0008	mg/l	1		20
Lead, Dissolved	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: 54 AUBURN STREET
Project Number: 6577
Lab Number: L1919953
Report Date: 05/17/19

SAMPLE RESULTS

Lab ID: L1919953-01
Client ID: B-101 (OW)
Sample Location: BROOKLINE, MA
Sample Depth:
Matrix: Water

Date Collected: 05/13/19 12:30
Date Received: 05/13/19
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	05/15/19 10:20	121,2540D	DR

Project Name: 54 AUBURN STREET
Project Number: 6577
Lab Number: L1919953
Report Date: 05/17/19

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: WG1237296-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	05/15/19 10:20	121,2540D	DR

Lab Duplicate Analysis

Batch Quality Control

Project Name: 54 AUBURN STREET
Project Number: 6577

Lab Number: L1919953
Report Date: 05/17/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1237296-2 QC Sample: L1920042-03 Client ID: DUP Sample						
Solids, Total Suspended	2800	2800	mg/l	0		29

Project Name: 54 AUBURN STREET
Project Number: 6577

Lab Number: L1919953
Report Date: 05/17/19

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(*)*
L1919953-01A	Plastic 250ml HNO3 preserved	A	<2	<2	2.6	Y	Absent		PB-2008S(180),CD-2008S(180)
L1919953-01B	Plastic 950ml unpreserved	A	7	7	2.6	Y	Absent		TSS-2540(7)

*Values in parentheses indicate holding time in days

Project Name:	54 AUBURN STREET	**Lab Number:**	L1919953
Project Number:	6577	**Report Date:**	05/17/19

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
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

Report Format: Data Usability Report

Project Name:	54 AUBURN STREET	**Lab Number:**	L1919953
Project Number:	6577	**Report Date:**	05/17/19

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.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

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

Data Qualifiers

A - Spectra identified as "Aldol 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.

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

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

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

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

Project Name:	54 AUBURN STREET	**Lab Number:**	L1919953
Project Number:	6577	**Report Date:**	05/17/19

REFERENCES

3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

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 624/624.1: 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 6860: SCM: Perchlorate

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

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

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

Westborough Facility:

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

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

Mansfield Facility:

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

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

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

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL — World Class Chemistry

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 5/13/19

ALPHA Job #: L1919953

Project Information

Project Name: 54 Auburn Street

Project Location: Brookline, MA

Project #: 6577

Project Manager: KWS

ALPHA Quote #:

Client Information

Client: McPhail Associates, LLC

Address: 2269 Massachusetts Avenue

Cambridge, MA 02140

Phone: (617) 868-1420

Fax:

Email: Kseaman@mcphailgeo.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
NPDES RGP	

Other Project Specific Requirements/Comments/Detection Limits:

Circle the following if required; -

SALINITY HARDNESS PH

Sect. A inorganics: Ammonia, Chloride, TRC,TSS,CrVI,CrIII, Tot-CN, RGP Metals
B- Non-Hal- VOC- 8260, 8260-SIM, Tot. Phenol Sect C- VOC- 8260 & 504
D: 8270/8270-SIM: E- PCB's, PCP(8270/8270-SIM): F-TPH, 8260, Sub-Ethanol

SAMPLE HANDLING
Filtration
☒ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Cd and Pb	TSS	Sample Specific Comments	TOTAL # BOTTLES
19953-01	B-101(OW)	5/13/19	12:50	GW	[illegible]	☒	☒		2

	Cd and Pb	TSS
Container Type	P	P
Preservative	C	A

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	5/13/19 14:30	[signature] AAL	5/13/19 14:50
[signature] AAL	5/13/19 18:40	[signature] AAL	5/13/19 1840

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

FORM NO: 01-01(I-NJ) (rev. 5-JAN-12)

ANALYTICAL REPORT

Lab Number:	L1921135
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	54 AUBURN STREET
Project Number:	6577
Report Date:	05/21/19

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: 54 AUBURN STREET
Project Number: 6577

Lab Number: L1921135
Report Date: 05/21/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1921135-01	B-101 (OW)	WATER	BROOKLINE, MA	05/13/19 12:30	05/13/19

Project Name:	54 AUBURN STREET	**Lab Number:**	L1921135
Project Number:	6577	**Report Date:**	05/21/19

Case Narrative

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

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

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

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

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

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

Project Name: 54 AUBURN STREET **Lab Number:** L1921135
Project Number: 6577 **Report Date:** 05/21/19

Case Narrative (continued)

Sample Receipt

L1921135-01: The sample was received above the appropriate pH for the Total Metals analysis. The laboratory added additional HNO3 to a pH <2.

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: Lisa Westerlind

Title: Technical Director/Representative Date: 05/21/19

METALS

Project Name: 54 AUBURN STREET
Project Number: 6577
Lab Number: L1921135
Report Date: 05/21/19

SAMPLE RESULTS

Lab ID: L1921135-01
Client ID: B-101 (OW)
Sample Location: BROOKLINE, MA
Sample Depth:
Matrix: Water

Date Collected: 05/13/19 12:30
Date Received: 05/13/19
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Cadmium, Total	0.00117		mg/l	0.00020	--	1	05/21/19 08:31	05/21/19 13:06	EPA 3005A	3,200.8	AM
Iron, Total	2.16		mg/l	0.050	--	1	05/21/19 08:31	05/21/19 12:35	EPA 3005A	19,200.7	LC
Lead, Total	ND		mg/l	0.00100	--	1	05/21/19 08:31	05/21/19 13:06	EPA 3005A	3,200.8	AM

Project Name: 54 AUBURN STREET
Project Number: 6577
Lab Number: L1921135
Report Date: 05/21/19

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: WG1239379-1										
Cadmium, Total	ND		mg/l	0.00020	--	1	05/21/19 08:31	05/21/19 12:43	3,200.8	AM
Lead, Total	ND		mg/l	0.00100	--	1	05/21/19 08:31	05/21/19 12:43	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: WG1239381-1										
Iron, Total	ND		mg/l	0.050	--	1	05/21/19 08:31	05/21/19 12:03	19,200.7	LC

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: 54 AUBURN STREET

Project Number: 6577

Lab Number: L1921135

Report Date: 05/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1239379-2								
Cadmium, Total	103		-		85-115	-		
Lead, Total	105		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1239381-2								
Iron, Total	108		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 54 AUBURN STREET
Project Number: 6577

Lab Number: L1921135
Report Date: 05/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1239379-3 QC Sample: L1920958-01 Client ID: MS Sample												
Cadmium, Total	ND	0.051	0.06276	123		-	-		70-130	-		20
Lead, Total	0.00177	0.51	0.5808	114		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1239381-3 QC Sample: L1920958-01 Client ID: MS Sample												
Iron, Total	0.470	1	1.67	120		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 54 AUBURN STREET

Project Number: 6577

Lab Number: L1921135

Report Date: 05/21/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1239379-4 QC Sample: L1920958-01 Client ID: DUP Sample						
Cadmium, Total	ND	ND	mg/l	NC		20
Lead, Total	0.00177	0.00177	mg/l	0		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1239381-4 QC Sample: L1920958-01 Client ID: DUP Sample						
Iron, Total	0.470	0.463	mg/l	2		20

Project Name: 54 AUBURN STREET
Project Number: 6577

Lab Number: L1921135
Report Date: 05/21/19

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(*)
L1921135-01A	Plastic 950ml HNO3 preserved	A	7	<2	2.6	N	Absent		CD-2008T(180),FE-UI(180),PB-2008T(180)

*Values in parentheses indicate holding time in days

Project Name:	54 AUBURN STREET	**Lab Number:**	L1921135
Project Number:	6577	**Report Date:**	05/21/19

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
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

Report Format: Data Usability Report

Project Name:	54 AUBURN STREET	**Lab Number:**	L1921135
Project Number:	6577	**Report Date:**	05/21/19

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.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

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

Data Qualifiers

A - Spectra identified as "Aldol 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.

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

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

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

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

Project Name: 54 AUBURN STREET
Project Number: 6577
Lab Number: L1921135
Report Date: 05/21/19

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.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
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 6860: SCM: Perchlorate

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

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

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

Westborough Facility:

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

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

Mansfield Facility:

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

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

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

L1921135 JM 5/20/19

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 5/13/19

ALPHA Job #: ~~L1919953~~

Project Information

Project Name: 54 Auburn Street

Project Location: Brookline, MA

Project #: 6577

Project Manager: KWS

ALPHA Quote #:

Client Information

Client: McPhail Associates, LLC

Address: 2269 Massachusetts Avenue

Cambridge, MA 02140

Phone: (617) 868-1420

Fax:

Email: Kseaman@mcphailgeo.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
NPDES RGP	

Other Project Specific Requirements/Comments/Detection Limits:

Circle the following if required:

SALINITY HARDNESS PH

Sect. A Inorganics: Ammonia, Chloride, TRC,TSS,CrVI,CrIII, Tot-CN, RGP Metals
B- Non-Hal- VOC- 8260, 8260-SIM, Tot. Phenol Sect C- VOC- 8260 & 504
D: 8270/8270-SIM: E- PCB's, PCP(8270/8270-SIM): F-TPH, 8260, Sub-Ethanol

ANALYSIS

Cd-2008T, Pb-2008T, Fe-UI,

SAMPLE HANDLING
Filtration
☒ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Cd and Pb	TSS		↓	Sample Specific Comments	TOTAL # BOTTLES
~~19953~~-01 21135-	B-101(OW)	5/13/19	12:50	GW	TM	☒	☒	☐	☒		2

Container Type	P	P	-	-	-	-	-	-	-	-	-	-
Preservative	C	A	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	5/13/19 14:20	[signature]	5/13/19 15:30
[signature] AAL	5/13/19 18:40	[signature] AAL	5/13/19 1840

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

FORM NO: 01-01(I) (rev. 5-JAN-12)

APPENDIX E:

SURFACE WATER LABORATORY ANALYTICAL DATA

ANALYTICAL REPORT

Lab Number:	L1917134
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	3 & 5 WASHINGTON STREET
Project Number:	5822.9.01
Report Date:	05/01/19

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: 3 & 5 WASHINGTON STREET
Project Number: 5822.9.01

Lab Number: L1917134
Report Date: 05/01/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1917134-01	MUDDY RIVER RGP SAMPLE	WATER	BROOKLINE, MA	04/25/19 09:00	04/25/19

Project Name:	3 & 5 WASHINGTON STREET	**Lab Number:**	L1917134
Project Number:	5822.9.01	**Report Date:**	05/01/19

Case Narrative

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

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

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

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

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

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

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:  Cristin Walker

Title: Technical Director/Representative Date: 05/01/19

METALS

Project Name: 3 & 5 WASHINGTON STREET
Lab Number: L1917134
Project Number: 5822.9.01
Report Date: 05/01/19

SAMPLE RESULTS

Lab ID: L1917134-01
Client ID: MUDDY RIVER RGP SAMPLE
Sample Location: BROOKLINE, MA
Date Collected: 04/25/19 09:00
Date Received: 04/25/19
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	04/26/19 13:50	04/29/19 10:03	EPA 3005A	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	04/26/19 13:50	04/29/19 10:03	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	04/26/19 13:50	04/29/19 10:03	EPA 3005A	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	04/26/19 13:50	04/29/19 10:03	EPA 3005A	3,200.8	AM
Copper, Total	0.00729		mg/l	0.00100	--	1	04/26/19 13:50	04/29/19 10:03	EPA 3005A	3,200.8	AM
Iron, Total	0.694		mg/l	0.050	--	1	04/26/19 13:50	04/30/19 17:27	EPA 3005A	19,200.7	AB
Lead, Total	0.00388		mg/l	0.00100	--	1	04/26/19 13:50	04/29/19 10:03	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	04/26/19 12:22	04/27/19 00:54	EPA 245.1	3,245.1	EA
Nickel, Total	ND		mg/l	0.00200	--	1	04/26/19 13:50	04/29/19 10:03	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	04/26/19 13:50	04/29/19 10:03	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	04/26/19 13:50	04/29/19 10:03	EPA 3005A	3,200.8	AM
Zinc, Total	0.02050		mg/l	0.01000	--	1	04/26/19 13:50	04/29/19 10:03	EPA 3005A	3,200.8	AM
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	133		mg/l	0.660	NA	1	04/26/19 13:50	04/30/19 17:27	EPA 3005A	19,200.7	AB
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		04/29/19 10:03	NA	107,-	

Project Name: 3 & 5 WASHINGTON STREET **Lab Number:** L1917134

Project Number: 5822.9.01 **Report Date:** 05/01/19

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: WG1230750-1										
Mercury, Total	ND		mg/l	0.0002	--	1	04/26/19 12:22	04/27/19 00:09	3,245.1	EA

Prep Information

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1230783-1										
Iron, Total	ND		mg/l	0.050	--	1	04/26/19 13:50	04/30/19 17:10	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
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1230783-1										
Hardness	ND		mg/l	0.660	NA	1	04/26/19 13:50	04/30/19 17:10	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
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1230794-1										
Antimony, Total	ND		mg/l	0.00400	--	1	04/26/19 13:50	04/29/19 09:31	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	04/26/19 13:50	04/29/19 09:31	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	04/26/19 13:50	04/29/19 09:31	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	04/26/19 13:50	04/29/19 09:31	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	04/26/19 13:50	04/29/19 09:31	3,200.8	AM

Project Name: 3 & 5 WASHINGTON STREET **Lab Number:** L1917134

Project Number: 5822.9.01 **Report Date:** 05/01/19

Method Blank Analysis
Batch Quality Control

Lead, Total	ND	mg/l	0.00100	--	1	04/26/19 13:50	04/29/19 09:31	3,200.8	AM
Nickel, Total	ND	mg/l	0.00200	--	1	04/26/19 13:50	04/29/19 09:31	3,200.8	AM
Selenium, Total	ND	mg/l	0.00500	--	1	04/26/19 13:50	04/29/19 09:31	3,200.8	AM
Silver, Total	ND	mg/l	0.00040	--	1	04/26/19 13:50	04/29/19 09:31	3,200.8	AM
Zinc, Total	ND	mg/l	0.01000	--	1	04/26/19 13:50	04/29/19 09:31	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: 3 & 5 WASHINGTON STREET

Project Number: 5822.9.01

Lab Number: L1917134

Report Date: 05/01/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1230750-2								
Mercury, Total	90		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1230783-2								
Iron, Total	103		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1230783-2								
Hardness	103		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1230794-2								
Antimony, Total	85		-		85-115	-		
Arsenic, Total	104		-		85-115	-		
Cadmium, Total	100		-		85-115	-		
Chromium, Total	100		-		85-115	-		
Copper, Total	95		-		85-115	-		
Lead, Total	104		-		85-115	-		
Nickel, Total	99		-		85-115	-		
Selenium, Total	110		-		85-115	-		
Silver, Total	103		-		85-115	-		
Zinc, Total	106		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 3 & 5 WASHINGTON STREET
Project Number: 5822.9.01

Lab Number: L1917134
Report Date: 05/01/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1230750-3 QC Sample: L1917057-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.0052	104		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1230750-5 QC Sample: L1917095-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.0043	86		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1230783-3 QC Sample: L1917134-01 Client ID: MUDDY RIVER RGP SAMPLE												
Iron, Total	0.694	1	1.71	102		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1230783-3 QC Sample: L1917134-01 Client ID: MUDDY RIVER RGP SAMPLE												
Hardness	133	66.2	194	92		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1230783-7 QC Sample: L1916629-01 Client ID: MS Sample												
Iron, Total	0.102	1	1.18	108		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1230783-7 QC Sample: L1916629-01 Client ID: MS Sample												
Hardness	227	66.2	291	97		-	-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: 3 & 5 WASHINGTON STREET
Project Number: 5822.9.01

Lab Number: L1917134
Report Date: 05/01/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1230794-3 QC Sample: L1917134-01 Client ID: MUDDY RIVER RGP SAMPLE									
Antimony, Total	ND	0.5	0.6319	126	-	-	70-130	-	20
Arsenic, Total	ND	0.12	0.1328	111	-	-	70-130	-	20
Cadmium, Total	ND	0.051	0.05722	112	-	-	70-130	-	20
Chromium, Total	ND	0.2	0.2184	109	-	-	70-130	-	20
Copper, Total	0.00729	0.25	0.2719	106	-	-	70-130	-	20
Lead, Total	0.00388	0.51	0.5455	106	-	-	70-130	-	20
Nickel, Total	ND	0.5	0.5468	109	-	-	70-130	-	20
Selenium, Total	ND	0.12	0.1360	113	-	-	70-130	-	20
Silver, Total	ND	0.05	0.05744	115	-	-	70-130	-	20
Zinc, Total	0.02050	0.5	0.6472	125	-	-	70-130	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 3 & 5 WASHINGTON STREET
Project Number: 5822.9.01

Lab Number: L1917134
Report Date: 05/01/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1230750-4 QC Sample: L1917057-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1230750-6 QC Sample: L1917095-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1230783-4 QC Sample: L1917134-01 Client ID: MUDDY RIVER RGP SAMPLE						
Iron, Total	0.694	0.677	mg/l	2		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1230783-4 QC Sample: L1917134-01 Client ID: MUDDY RIVER RGP SAMPLE						
Hardness	133	132	mg/l	1		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1230794-4 QC Sample: L1917134-01 Client ID: MUDDY RIVER RGP SAMPLE						
Antimony, Total	ND	0.00595	mg/l	NC		20
Arsenic, Total	ND	ND	mg/l	NC		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	ND	ND	mg/l	NC		20
Copper, Total	0.00729	0.00759	mg/l	4		20
Lead, Total	0.00388	0.00379	mg/l	2		20
Nickel, Total	ND	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.02050	0.01994	mg/l	3		20

INORGANICS
&
MISCELLANEOUS

Project Name: 3 & 5 WASHINGTON STREET
Project Number: 5822.9.01
Lab Number: L1917134
Report Date: 05/01/19

SAMPLE RESULTS

Lab ID: L1917134-01
Client ID: MUDDY RIVER RGP SAMPLE
Sample Location: BROOKLINE, MA
Sample Depth:
Matrix: Water
Date Collected: 04/25/19 09:00
Date Received: 04/25/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	8.5		mg/l	5.0	NA	1	-	04/26/19 15:55	121,2540D	DR
Cyanide, Total	ND		mg/l	0.005	--	1	04/26/19 06:17	04/26/19 12:37	121,4500CN-CE	LH
pH (H)	6.9		SU	-	NA	1	-	04/25/19 22:47	121,4500H+-B	AS
Nitrogen, Ammonia	0.259		mg/l	0.075	--	1	04/26/19 02:00	04/26/19 20:51	121,4500NH3-BH	AT
Chromium, Hexavalent	ND		mg/l	0.010	--	1	04/25/19 23:00	04/25/19 23:29	1,7196A	JW

Project Name: 3 & 5 WASHINGTON STREET
Project Number: 5822.9.01
Lab Number: L1917134
Report Date: 05/01/19

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: WG1230458-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	04/25/19 23:00	04/25/19 23:27	1,7196A	JW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1230492-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	04/26/19 02:00	04/26/19 20:45	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1230561-1										
Cyanide, Total	ND		mg/l	0.005	--	1	04/26/19 06:17	04/26/19 12:27	121,4500CN-CE	LH
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1230612-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	04/26/19 15:55	121,2540D	DR

Lab Control Sample Analysis

Batch Quality Control

Project Name: 3 & 5 WASHINGTON STREET

Project Number: 5822.9.01

Lab Number: L1917134

Report Date: 05/01/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1230452-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1230458-2								
Chromium, Hexavalent	96		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1230492-2								
Nitrogen, Ammonia	90		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1230561-2								
Cyanide, Total	93		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 3 & 5 WASHINGTON STREET
Project Number: 5822.9.01

Lab Number: L1917134
Report Date: 05/01/19

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: WG1230458-4 QC Sample: L1917134-01 Client ID: MUDDY RIVER RGP SAMPLE												
Chromium, Hexavalent	ND	0.1	0.085	85		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1230492-4 QC Sample: L1916923-17 Client ID: MS Sample												
Nitrogen, Ammonia	0.130	4	3.67	88		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1230561-4 QC Sample: L1917160-01 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.199	100		-	-		90-110	-		30

Lab Duplicate Analysis

Batch Quality Control

Project Name: 3 & 5 WASHINGTON STREET

Project Number: 5822.9.01

Lab Number: L1917134

Report Date: 05/01/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1230452-2 QC Sample: L1917057-01 Client ID: DUP Sample						
pH	11.0	10.8	SU	2		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1230458-3 QC Sample: L1917134-01 Client ID: MUDDY RIVER RGP SAMPLE						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1230492-3 QC Sample: L1916923-17 Client ID: DUP Sample						
Nitrogen, Ammonia	0.130	0.130	mg/l	0		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1230561-3 QC Sample: L1917134-01 Client ID: MUDDY RIVER RGP SAMPLE						
Cyanide, Total	ND	ND	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1230612-2 QC Sample: L1917079-01 Client ID: DUP Sample						
Solids, Total Suspended	7300	7100	mg/l	3		29

Project Name: 3 & 5 WASHINGTON STREET
Project Number: 5822.9.01

Lab Number: L1917134
Report Date: 05/01/19

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(*)
L1917134-01A	Plastic 250ml H2SO4 preserved	A	<2	<2	3.2	Y	Absent		NH3-4500(28)
L1917134-01B	Plastic 250ml NaOH preserved	A	>12	>12	3.2	Y	Absent		TCN-4500(14)
L1917134-01C	Plastic 250ml HNO3 preserved	A	<2	<2	3.2	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)
L1917134-01D	Plastic 500ml unpreserved	A	7	7	3.2	Y	Absent		HEXCR-7196(1),PH-4500(.01)
L1917134-01E	Plastic 950ml unpreserved	A	7	7	3.2	Y	Absent		TSS-2540(7)

*Values in parentheses indicate holding time in days

Project Name:	3 & 5 WASHINGTON STREET	**Lab Number:**	L1917134
Project Number:	5822.9.01	**Report Date:**	05/01/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

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

Report Format: Data Usability Report

Project Name:	3 & 5 WASHINGTON STREET	**Lab Number:**	L1917134
Project Number:	5822.9.01	**Report Date:**	05/01/19

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.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

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

Data Qualifiers

A - Spectra identified as "Aldol 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.

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

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

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

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

Project Name:	3 & 5 WASHINGTON STREET	**Lab Number:**	L1917134
Project Number:	5822.9.01	**Report Date:**	05/01/19

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.

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.

107 Alpha Analytical - In-house calculation method.

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 624/624.1: 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 6860: SCM: Perchlorate

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

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

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

Westborough Facility:

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

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

Mansfield Facility:

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

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

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

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL — World Class Chemistry

Westborough, MA — TEL: 508-898-9220 — FAX: 508-898-9193
Mansfield, MA — TEL: 508-822-9300 — FAX: 508-822-3288

Date Rec'd in Lab: 4/25/19

ALPHA Job #: L1917134

Project Information

Project Name: 3 & 5 Washington Street

Project Location: Brookline, MA

Project #: 5822.9.01

Project Manager: KWS

ALPHA Quote #:

Client Information

Client: McPhail Associates, LLC

Address: 2269 Massachusetts Avenue

Cambridge, MA 02140

Phone: (617) 868-1420

Fax:

Email: kseaman@mcphailgeo.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info

PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
NPDES RGP	

Other Project Specific Requirements/Comments/Detection Limits:

Circle the following if required:
Sect. A inorganics: Ammonia, Chloride, TRC,TSS,CrVI,CrIII, Tot-CN, RGP Metals
B- Non-Hal- VOC- 8260, 8260-SIM, Tot. Phenol Sect C- VOC- 8260 & 504
D: 8270/8270-SIM: E- PCB's, PCP(8270/8270-SIM): F-TPH, 8260, Sub-Ethanol

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	RGP Metals (200.8) (A)	TSS,hardness, pH	Ammonia (4500 (A))	TCN (A)	CrVI,CrIII,								Sample Specific Comments	TOTAL # BOTTLES
17134-01	Muddy River RGP Sample	4/25/19	9:00	SW	JSW	☒	☒	☒	☒	☒	☐	☐	☐	☐	☐	☐	☐		5
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
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						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
					Container Type	P	P	P	P	P	-	-	-	-	-	-	-		
					Preservative	C	A	D	E	A	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	4/25/19 9:00	[signature] AAL	4/25 1600
[signature] AAL	4/25 1720	[signature] 4/25/19 1720	

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

FORM NO: 01-01(I-NJ) (rev. 5-JAN-12)

APPENDIX F:

BEST MANAGEMENT PRACTICE PLAN

A Notice of Intent for a Remediation General Permit (RGP) under the National Pollutant Discharge Elimination System (NPDES) has been submitted to the US Environmental Protection Agency (EPA) in anticipation of temporary construction dewatering that will occur during redevelopment of 54 Auburn Street, Brookline, Massachusetts. This Best Management Practices Plan (BMPP) has been prepared as an Appendix to the RGP and will be posted at the site during the time period that temporary construction dewatering is occurring at the site.

Water Treatment and Management

During construction of the proposed building foundation, dewatering effluent is anticipated to be pumped from localized sumps and trenches within the excavation directly into a settling tank. A review of available subgrade sanitary and storm sewer system plans accessed by the Town of Brookline's Engineering Department indicated discharge from the subject site outfalls at C400-034 near Brookline Avenue along the Muddy River as seen in (Figure 3). Dewatering effluent treatment will consist of a settling tank and bag filters to remove suspended soil particulates, and an ion resin media vessel prior to off-site discharge. pH adjustment will be conducted, if necessary, through the addition of hydrochloric acid, caustic soda and carbon dioxide.

Discharge Monitoring and Compliance

Regular sampling and testing will be conducted at the influent to the system and the treated effluent as required by the RGP. During the first week of discharge, the operator must sample the untreated influent and treated effluent two times: one (1) sample of untreated influent and one (1) sample of treated effluent be collected on the first day of discharge, and one (1) sample of untreated influent and one (1) sample of treated effluent must be collected on one additional non-consecutive day within the first week of discharge. Samples must be analyzed in accordance with 40 CFR §136 unless otherwise specified by the RGP, with a maximum 5-day turnaround time and results must be reviewed no more than 48 hours from receipt of the results of each sampling event. After the first week, samples may

be analyzed with up to a ten (10)-day turnaround time and results must be reviewed no more than 72 hours from receipt of the results. If the treatment system is operating as designed and achieving the effluent limitations outlined in the RGP, on-going sampling shall be conducted weekly for three (3) additional weeks beginning no earlier than 24 hours following initial sampling, and monthly as described below. Any adjustments/reductions in monitoring frequency must be approved by EPA in writing.

In accordance with Part 4.1 of the RGP, the operator must perform routine monthly monitoring for both influent and effluent beginning no more than 30 days following the completion of the sampling requirements for new discharges or discharges that have been interrupted. The routine monthly monitoring is to be conducted through the end of the scheduled discharge. The routine monthly monitoring must continue for five (5) consecutive months prior to submission of any request for modification of monitoring frequency.

Dewatering activity for the Site is classified as Category III-G: Sites with Known Contamination. Monitoring shall include analysis of influent and effluent samples dictated by the EPA.

Monitoring will include checking the condition of the treatment system, assessing the need for treatment system adjustments based on monitoring data, observing, and recording daily flow rates and discharge quantities, and verifying the flow path of the discharged effluent.

The total monthly flow will be monitored by checking and documenting the flow through the flow meter to be installed on the system. Flow will be maintained below the "system design flow" by regularly monitoring flow and adjusting the amount of construction dewatering as needed. Monthly monitoring reports will be compiled and maintained at the site.

System Maintenance

A number of methods will be used to minimize the potential for violations during the term of this permit discharge. Scheduled regular maintenance and periodic cleaning of the treatment system will be conducted to verify proper operation and shall be conducted in accordance with Section 1.11 of the project earthwork specifications. Regular maintenance will include checking the condition of the treatment system equipment such as the settling tanks, bag filters, hoses, pumps, and flow meters. Equipment will be monitored daily for potential issues and unscheduled maintenance requirements.

Employees who have direct or indirect responsibility for ensuring compliance with the RGP will be trained by the Contractor.

Miscellaneous Items

It is anticipated that the erosion control measures and the nature of the site will minimize potential runoff to or from the site. The project specifications also include requirements for

erosion control. Site security for the treatment system will be addressed within the overall site security plan.

No adverse effects on designated uses of surrounding surface water bodies is anticipated. The nearest surface water body is the Muddy River, classified by the DEP as a Class B Surface Water Body, that is located approximately 3,300 feet to the east of the subject site. Dewatering effluent will be pumped into a settling tank. Water within the settling tank will pumped through bag filters and, as necessary, and ion exchange chambers prior to discharge into the storm drains.

Management of Treatment System Materials

Dewatering effluent will be pumped directly into the treatment system from the excavation with use of hoses and localized sumps to minimize handling. The Contractor will establish staging areas for equipment or materials storage that may be possible sources of pollution away from any dewatering activities, to the extent practicable.

Sediment from the tank used in the treatment system will be characterized and removed from the site to an appropriate receiving facility, in accordance with applicable laws and regulations. Bag and GAC filters will be replaced/disposed of as necessary.