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

3 AND 5 WASHINGTON STREET, 165 COREY ROAD, AND 43 & 51 BARTLETT CRESCENT

BRIGHTON & BROOKLINE, MASSACHUSETTS

AUGUST 30, 2019

Prepared For:
U.S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF ECOSYSTEM PROTECTION
5 POST OFFICE SQUARE, SUITE 100
BRIGHTON, MA 02109-3912

On Behalf Of:
5 Washington Square Owner LLC
c/o Goulston & Storrs PC
&
Callahan Construction, Inc.

PROJECT NO. 5822

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

August 30, 2019

U.S. Environmental Protection Agency
Office of Ecosystem Protection
5 Post Office Square, Suite 100
Brighton, MA 02109-3912

Attention: To Whom It May Concern

Reference: 3 and 5 Washington Street, 165 Corey Road, and 43 & 51 Bartlett Crescent ; Brighton and Brookline, Massachusetts
Notice of Intent for Temporary Construction Dewatering Discharge;
Massachusetts Remediation General Permit MAG910000

Ladies and Gentlemen:

In accordance with the provisions of the Remediation General Permit MAG9100000 (RGP) that was issued to the Commonwealth of Massachusetts, 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 Charles River via the City of Brookline storm drain system. The temporary discharge of construction dewatering will occur during redevelopment of the 3 and 5 Washington Street and 165 Corey Road in Brighton, Massachusetts and the development of 43 & 51 Bartlett Crescent 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 in accordance with our proposal dated February 11, 2019, and the subsequent authorization of 5 Washington Square Owner, LLC c/o Goulston & Storrs PC. These services are subject to the limitations contained in **Appendix A**.

The required Notice of Intent Form contained in the RGP permit and the Boston Water and Sewer Commission (BWSC) Discharge Permit are included in **Appendix B**.

Applicant/Operator

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

Callahan Construction, Inc.
80 First Street
Bridgewater, MA 02324

Attention: Mr. Robert Sanda

Tel: (508) 279 9524
Email: rsanda@callahin-inc.com

Existing Conditions

The subject site is bounded by Washington Street to the southeast, Corey Road to the northwest, 169 Corey Road to the northeast, the Foley Abrams Building at 45 Bartlett Crescent to the west and Bartlett Crescent to the south. The southeastern corner of the subject site along Bartlett Crescent is situated within the Town of Brookline. The subject site has an approximate 43,300 square-foot footprint that includes a gas station/auto repair facility at 3 and 5 Washington Street and an office building at 165 and 167 Corey Road, Brighton, Massachusetts. Both of the above referenced buildings are currently vacant. Portions of the subject site not occupied by a building are covered by bituminous pavement. The limits of the subject site are shown on **Figure 2**.

Existing ground surface at the subject site slopes from the northern corner of 167 Corey Road, Elevation +144, to the corner of Bartlett Crescent and Washington Street, Elevation +132, to the south. 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

Prior to the redevelopment, demolition of the existing site buildings and the decommissioning of at least three (3) underground storage tanks (USTs) will be completed. It is understood that the current scope of development will include the construction of a rectangle-shaped, 5-story, mixed-use building within the southern portion of the site. The mixed-used building is planned to have 1-level of below-parking with a lowest level footprint of about 33,000 square feet. It is understood that the proposed basement, garage, finished floor elevations are at Elevation +121, Elevation +131.5 and Elevation +133.5, respectively.

Outside of the proposed structures, it is understood that site improvements will generally consist of paved surface parking, walkways, and a landscaped park area.

Temporary construction dewatering is anticipated to be required to facilitate excavation to the basement subgrade, which will extend about 11 to 16 feet below the existing ground surface at the site.

Site Release History

According to a Class B-2 RAO submitted by Corporate Environmental Advisors, Inc. (CEA) to the MADEP in April 2013, laboratory analyses of soil samples collected as part of a due diligence environmental assessment indicated concentrations of C5-C8 aliphatics, C9-C10 aromatics, benzene, toluene, ethylbenzene, naphthalene and/or 2-methylnaphthalene MCP RCS-1 Reportable Concentrations (RCs) constituting a 120-day reporting condition. On April 9, 2012, a Release Notification Form was submitted to MADEP for the reporting condition by

CEA, on behalf of Brighton Auto Clinic (the former site owner), and RTN 3-30762 was assigned to the subject site.

Between November 7, 2012 and March 5, 2013, CEA conducted assessment activities at the subject site including advancement of soil borings, installation of three (3) monitoring wells and three (3) soil gas monitoring points, and sampling and analysis of soil, soil gas and groundwater. In November 2012, the results of soil samples indicated concentrations of C5-C8 aliphatic and C9-C10 aromatics above the MCP S-1/GW-2, GW-3 standards. The analytical results of the remaining VPH, EPH, VOCs and Metals were below the applicable MCP Method 1 S-1 standards. On November 28, 2012 and January 30, 2013, groundwater samples were collected from monitoring wells and were submitted for analysis of VPH, EPH, VOCs and/or Metals. Concentrations of C5-C8 aliphatics and/or benzene were detected above the Method 1 GW-2 standard in the groundwater samples collected from monitoring wells MW-101 and MW-103.

On April 14, 2013, a Class B-2 RAO was submitted to the MADEP in which CEA and EnviroBusiness, Inc (EBI) determined that a condition of No Significant Risk (NSR) exists the implementation of an Activity and Use Limitation (AUL) that restricts potential future exposures to oil and/or hazardous material (OHM) in indoor air on the 3 Washington Street and 5 Washington Street properties.

As a result of the regulatory status, a Release Abatement Measure (RAM) Plan will be prepared in accordance with the Massachusetts Contingency Plan to manage contaminated soil during excavation activities associated with the proposed redevelopment.

Construction Site Dewatering

Groundwater was observed within explorations that were completed at the site at depths ranging from about 9 to 13 feet below the existing ground surface or from Elevation +119 to Elevation +123. It is anticipated that future groundwater levels across the site may vary from those reported herein due to factors such as normal seasonal changes, periods of heavy precipitation, and alterations of existing drainage patterns. Groundwater monitoring reports documenting levels observed within the groundwater observation wells at the site are included in **Appendix C**.

It is likely that during the proposed decommissioning of the USTS, groundwater will be encountered and dewatering under this RGP may be necessary. Additionally, in order to facilitate the construction of the basement level, a solider pile and timber lagging excavation support system will be installed around the perimeter of the basement foundation wall. Thus, construction dewatering will be generally required within the footprint of the excavation to facilitate construction of the proposed basement level of the building, but may also be required within other areas of the site during and following precipitation events.

It is anticipated that rate of construction dewatering during excavation of the fill soils will initially be on the order about 50 gallons per minute (gpm). However, over the course of the excavation, it anticipated that rate of construction dewatering will decrease to approximately 25 gallons per minute. These estimates do not include surface run-off which will be removed from the excavation during and following precipitation events.

Given that the area of the foundation occupies a majority of the subject site, temporary on-site collection and recharge of groundwater is not considered feasible. As a result, construction dewatering will require the discharge of collected groundwater into the storm drain system.

A review of storm water and sewer plans available on the City of Boston and City of Brookline Sewer and Storm water database indicates dedicated storm drains located beneath Washington Street, Corey Road, and Bartlett Crescent. The storm drains flow east and outfalls into the Muddy River near the intersection of River Road and Brookline Avenue. The location of the catch basin in relation to the subject site is indicated on **Figure 2**. The flow path of the discharge is shown on **Figure 3A and 3B**.

Site Environmental Setting, Nearby DEP-listed Disposal Sites, Endangered Species and Surrounding Historical Places

Based on an on-line edition of the Massachusetts Geographic Information Systems MassDEP Phase I Site Assessment Map (GIS Map) viewed on July 19, 2019 the subject site is not located within the boundaries of a Sole Source Aquifer, Potentially Productive Aquifer or within a Zone II, Interim Wellhead Protection Area as defined by the Massachusetts Department of Environmental Protection. Further, there are no public drinking water supply wells, no Areas of Critical Environmental Concern, no fish habitats, no habitats of Species of Special Concern or Threatened or Endangered Species within 500 feet of the subject site.

The GIS Map indicates that there are no water bodies or wetland areas at the subject site. The nearest water body is the Chestnut Hill Reservoir which is located approximately 4,000 feet to the west of the subject site. No areas designated as solid waste sites (landfills) are noted as being located within 1,000 feet of the site. A copy of the GIS Map is included in **Appendix C**. In addition, a report prepared by Environmental Database Resource, Inc. (EDR) was reviewed for this study. Based on EDR's search of FEMA Flood Plain Maps, the subject site is not located within a 100 year or 500 year flood plain.

As indicated above, this site is a release site and in 2013, a Class B-2 RAO was submitted for this RTN because a Condition of No Significant Risk exists at the parcels, which is contingent upon maintaining an Activity and Use Limitation (AUL).

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 demolition of existing buildings or construction of new buildings will impact the Northern Long-Eared Bate. 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**.

A review of the most recent National Register of Historical Places for Suffolk County in Brighton, Massachusetts as well as the online Massachusetts Cultural Resource Information System (MACRIS) did not identify records or addresses of historic places that exist in the immediate vicinity of the subject site or at the subject site.

Summary of Groundwater Analysis

On April 12, 2019 McPhail Associates, LLC obtained a sample of groundwater at the subject site from monitoring well B-117(OW). The groundwater sample was submitted to a certified laboratory for analysis for the presence of compounds required under the EPA's RGP application, including total suspended solids (TSS), pH, total residual chlorine, and zinc), semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs) including total benzene, toluene, ethylbenzene and xylenes (BTEX), and total recoverable metals. Analytical results of the testing of groundwater samples obtained in 2019 are summarized in **Table 1** and the laboratory data are enclosed in **Appendix D**.

In conjunction with the updated 2017 NPDES RGP, a sample of water from the Muddy River was obtained on April 25, 2019 and analyzed for recoverable metals, ammonia, pH, and hardness and is summarized in **Table 2**. The analytical test results are included in the enclosed **Appendix E**.

In summary, groundwater testing performed at the subject site has detected concentrations of suspended solids, ammonia, chloride, copper, chromium, iron, lead, and nickel. The Appendix V calculations indicate Technology-Based Effluent Limitations (TBELs) apply for all testing parameters except iron and TRC which triggered WQBELs. However, it is noted that the WQBEL for TRC is not applicable because groundwater at the subject site has not, nor will not be treated with chlorine in accordance with the development or previous environmental activities.

Additionally, as discussed above, previous groundwater testing completed at the subject site in connection with RTN 3-30762 indicate detectable levels of EPH and VPH in four (4) observation wells in March 2019. The results of the laboratory analysis exceeded cleanup standards. Specifically, Method 1 GW-2-14 Standards were exceeded in monitoring well B-117(OW) for C9-C10 Aromatics and monitoring wells B-117(OW) and B-121(OW) for C5-C8

Aliphatics. The groundwater data is summarized in **Table 3**, and laboratory data is included in **Appendix E.**

Groundwater Treatment

The results of groundwater testing indicate the presence of metals, petroleum hydrocarbons, semivolatile organic compounds, and volatile organic compounds which require treatment prior to leaving the site. In summary, the Appendix V calculations indicate Technology-Based Effluent Limitations (TBELs) apply for all Inorganics except iron and TRC. However, historical release conditions at the subject site indicate concentrations of petroleum hydrocarbons, semivolatile organics, and volatile organics in soil which are likely to be encountered during construction dewatering discharge.

Based on the results of the above referenced groundwater analyses, it is our opinion that a 10,000-gallon capacity settling tank, bag filter, and a granular activated carbon (GAC) filter in series will be required to settle and filter out suspended inorganic metals and to reduce potential presence of petroleum hydrocarbons, semivolatile organic compounds, and volatile organic compounds 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**.

A Best Management Practices Plan (BMPP) has been prepared as **Appendix F** for the RGP and will be posted at the site during the time period that temporary construction dewatering is occurring.

Summary and Conclusions

The purpose of this report is to summarize site environmental conditions and groundwater data to support a Notice of Intent to discharge under the Remediation General Permit, for off-site discharge of dewatered groundwater which will be encountered during the redevelopment at 3 and 5 Washington Street and 165 Corey Road in Brighton, Massachusetts and the development of 43 & 51 Bartlett Crescent in Brookline, Massachusetts. The groundwater testing results reported in this application have been provided to the site owner.

Based on the results of the above referenced groundwater analyses, treatment of construction dewatering will be necessary to meet allowable TBELS for inorganics established by the US EPA prior to off-site discharge. The proposed construction dewatering treatment system will consist of one settling tank (10,000-gallons in capacity), bag filter, and a granular activated carbon (GAC) filter in series to filter out sediment containing elevated levels of metals as well as potential concentrations of petroleum related contaminants that may be encountered in soil. However, should the effluent monitoring results indicate levels in excess of the applicable

TBELs and/or WQBEL 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.

Sincerely,

McPHAIL ASSOCIATES, LLC

Joseph S. Wold

William J. Burns, L.S.P.

JSW/wjb

N:\Working Documents\Reports\5822_RGP_083019.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

3 & 5 WASHINGTON ST, 165 COREY RD AND 43 & 51 BARTLETT CRESCENT

BROOKLINE MASSACHUSETTS

FIGURE 2

NORTH

APPROXIMATE LIMITS OF PROPOSED PARKING LEVEL AT EL.+120.2

APPROXIMATE LIMITS OF SUBJECT SITE

EW-1

EW-2

EW-3

EW-4

EW-5

EW-6

APPROXIMATE LOCATION OF CATCH BASIN INTO TOWN OF BROOKLINE STORM WATER SYSTEM

APPROXIMATE LOCATION OF CATCH BASIN INTO TOWN OF BROOKLINE STORM WATER SYSTEM

COREY ROAD
(PUBLIC - WIDTH UNKNOWN)

WASHINGTON STREET
(PUBLIC - 40' WIDE)

GRAPHIC SCALE
30 0 30 60

LEGEND

⊕ — APPROXIMATE LOCATION OF EXISTING GROUNDWATER MONITORING WELL INSTALLED BY OTHERS

REFERENCE: THIS PLAN WAS PREPARED FROM A 20-SCALE DRAWING ENTITLED, "BOUNDARY AND TOPOGRAPHIC SURVEY" DATED OCTOBER 8, 2014 PREPARED BY CONTROL POINT ASSOCIATES, INC.

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

3 & 5 WASHINGTON ST, 165 COREY RD, AND 43 & 51 BARTLETT CRESCENT
BRIGHTON / BROOKLINE MASSACHUSETTS

SITE PLAN

FOR

5 WASHINGTON SQ OWNER LLC & CALLAHAN CONSTRUCTION, INC.

BY

McPHAIL ASSOCIATES, LLC

Date: AUGUST 2019	Dwn: F.G.P.	Chkd: J.S.W.	Scale: 1" = 30'
Project No: 5822			

FILE NAME: N:\Acad\JOBS\5822\RGP\5822-F02rev1.dwg

FIGURE 3A

NORTH

COREY RD

WESTBOURNE TER

SAINT JOHN OF GOD HOSPITAL

PARKING

HARRIET A BALDWIN ELEMENTARY SCHOOL

APPROXIMATE LIMITS OF SUBJECT SITE

APPROXIMATE LOCATIONS OF CATCH BASINS INTO TOWN OF BROOKLINE STORWATER SYSTEM

APPROXIMATE LOCATION OF CATCH BASIN INTO TOWN OF BROOKLINE STORWATER SYSTEM

CG72 143.25

CG67 145.36

CG73 124.76

CG65 126.78

CG76 127.19

REFERENCE: THIS PLAN WAS PREPARED FROM A 100-SCALE DRAWING ENTITLED "BOSTON WATER AND SEWER" PRINTED ON FEBRUARY 4, 2016 BY BOSTON WATER AND SEWER COMMISSION.

GRAPHIC SCALE

30 0 30 60

FILE NAME: N:\Acad\OB515822RGP\5822-F03A.dwg

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

3 & 5 WASHINGTON ST, 165 COREY RD, AND 43 & 51 BARTLETT CRESCENT
BRIGHTON / BROOKLINE MASSACHUSETTS

STORM DRAIN DISCHARGE FLOW PATH

FOR

5 WASHINGTON SQ OWNER LLC & CALLAHAN CONSTRUCTION, INC.

BY

McPHAIL ASSOCIATES, LLC

Date: AUGUST 2019	Dwn: F.G.P.	Chkd: J.S.W.	Scale: 1" = 30'
Project No: 5822			

FIGURE 3B

NORTH

APPROXIMATE LIMITS OF SUBJECT SITE

APPROXIMATE LOCATION OF DISCHARGE INTO MUDDY RIVER

GRAPHIC SCALE

600 0 600 1200

REFERENCE: THIS PLAN WAS PREPARED FROM A 9000-SCALE DRAWING ENTITLED "TOWN OF BROOKLINE, MASSACHUSETTS DRAINAGE AREAS" PRINTED ON MAY 2019 FROM THE CITY OF BROOKLINE DATABASE WEBSITE.

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

3 & 5 WASHINGTON ST, 165 COREY RD, AND 43 & 51 BARTLETT CRESCENT
BRIGHTON / BROOKLINE MASSACHUSETTS

STORM DRAIN DISCHARGE FLOW PATH

FOR

5 WASHINGTON SQ OWNER LLC & CALLAHAN CONSTRUCTION, INC.

BY

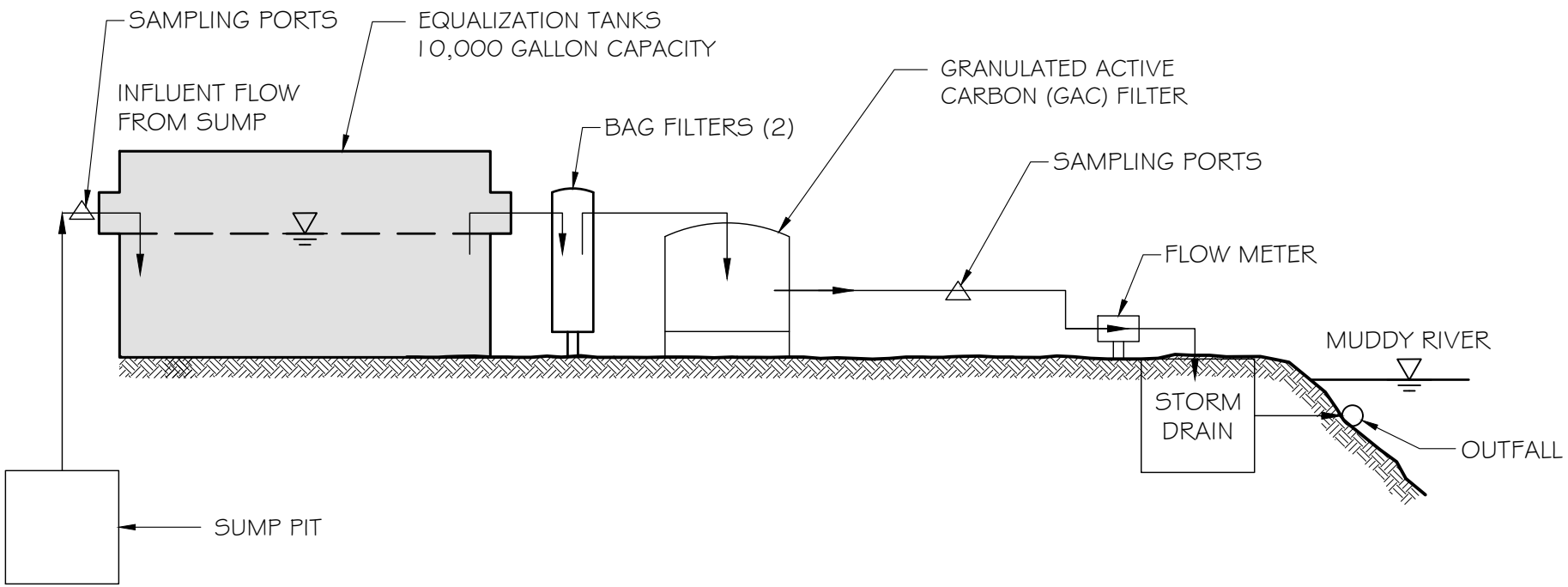
McPHAIL ASSOCIATES, LLC

Date: AUGUST 2019	Dwn: F.G.P.	Chkd: J.S.W.	Scale: 1" = 30'
Project No: 5822			

FILE NAME: N:\Acad\JOBS\5822\RGP\5822-F03B.dwg

FILE NAME: N:\Acad\JOBS\5822\RGP\5822-F04.dwg

FIGURE 4



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

3 & 5 WASHINGTON ST, 165 COREY RD, AND 43 & 51 BARTLETT CRESCENT
BRIGHTON / BROOKLINE MASSACHUSETTS

SCHEMATIC OF TREATMENT SYSTEM

FOR

5 WASHINGTON SQ OWNER LLC & CALLAHAN CONSTRUCTION, INC.

BY

McPHAIL ASSOCIATES, LLC
CONSULTING GEOTECHNICAL ENGINEERS

Date: AUGUST 2019	Dwn: F.G.P.	Chkd: K.S.W.	Scale: N.T.S.
Project No: 5822			

Table 1
Labratory Analytical Results - Groundwater
B-117 (OW)

3 and 5 Washington Street
Brookline and Brighton, MA
Project No.5822

LOCATION	EPA - Freshwater Aquatic Life Chronic Criteria	B-117 (OW)	B-117 (OW)
SAMPLING DATE		4/12/2019	4/12/2019
LAB SAMPLE ID		L1915179-01	L1915179-01 R1
SAMPLE TYPE		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		1470	-
pH (SU)		6.8	-
Phenolics, Total		ND(30)	-
Solids, Total Suspended		21000	-
TPH, SGT-HEM		ND(4000)	-
Chloride	230000	**875000**	**-**
Hardness		285000	
Total Metals (ug/l)			
Antimony, Total		ND(4)	-
Arsenic, Total	150	4.09	-
Cadmium, Total	0.25	ND(0.2)	**-**
Chromium, Total		ND(1)	-
Copper, Total		ND(2)	-
Iron, Total	1000	**10900**	-
Lead, Total	2.5	2	-
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	ND(10)	-
Semivolatile Organics (ug/l)			
Naphthalene		490	390
SUM		490	390
Volatile Organics (ug/l)			
Benzene		27	-
Ethylbenzene		390	-
o-xylene		300	-
p/m-Xylene		1300	-
SUM		2017	

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

Table 2
Labratory Analytical Results - Surface Water
Muddy River

3 and 5 Washington Street
Brighton and Brookline, MA
Project No.5822

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

Table 3
Labratory Analytical Results - Historical Groundwater

3 and 5 Washington Street
Brighton and Brookline, MA
Project No.5822

LOCATION	MassDEP Reportable Concentrations	MassDEP Method 1 Cleanup Standards		B-116 (OW)	B-117 (OW)	B-117(OW)	B-119 (OW)	B-120 (OW)	B-121 (OW)	B-121 (OW)
SAMPLING DATE				3/19/2019	3/19/2019	3/28/2019	3/19/2019	3/19/2019	3/19/2019	3/28/2019
LAB SAMPLE ID				L1910812-02	L1910812-01	L1912483-01	L1910812-05	L1910812-04	L1910812-03	L1912483-02
SAMPLE TYPE				Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groudnwater
	RCGW-2-14	GW-2-14	GW-3-14							
EPH w/MS Targets (ug/l)										
C9-C18 Aliphatics	5000	5000	50000	ND(98)	2540	-	ND(98)	ND(98)	359	-
C19-C36 Aliphatics	50000		50000	ND(98)	583	-	ND(98)	ND(98)	ND(98)	-
C11-C22 Aromatics, Adjusted	5000	50000	5000	ND(98)	1030	-	ND(98)	181	265	-
Naphthalene	700	700	20000	5.18	454	-	4.17	6.52	215	-
2-Methylnaphthalene	2000	2000	20000	2	246	-	1.5	19	72.2	-
Acenaphthylene	40	10000	40	ND(0.392)	ND(7.84)	-	ND(0.392)	ND(0.392)	ND(3.92)	-
Acenaphthene	10000		10000	ND(0.392)	ND(7.84)	-	ND(0.392)	ND(0.392)	ND(3.92)	-
Fluorene	40		40	ND(0.392)	ND(7.84)	-	ND(0.392)	ND(0.392)	ND(3.92)	-
Phenanthrene	10000		10000	ND(0.392)	ND(7.84)	-	ND(0.392)	ND(0.392)	ND(3.92)	-
Anthracene	30		30	ND(0.392)	ND(7.84)	-	ND(0.392)	ND(0.392)	ND(3.92)	-
Fluoranthene	200		200	ND(0.392)	ND(7.84)	-	ND(0.392)	ND(0.392)	ND(3.92)	-
Pyrene	20		20	ND(0.392)	ND(7.84)	-	ND(0.392)	ND(0.392)	ND(3.92)	-
Benzo(a)anthracene	1000		1000	ND(0.392)	ND(7.84)	-	ND(0.392)	ND(0.392)	ND(3.92)	-
Chrysene	70		70	ND(0.392)	ND(7.84)	-	ND(0.392)	ND(0.392)	ND(3.92)	-
Benzo(b)fluoranthene	400		400	ND(0.392)	ND(7.84)	-	ND(0.392)	ND(0.392)	ND(3.92)	-
Benzo(k)fluoranthene	100		100	ND(0.392)	ND(7.84)	-	ND(0.392)	ND(0.392)	ND(3.92)	-
Benzo(a)pyrene	500		500	ND(0.196)	ND(3.92)	-	ND(0.196)	ND(0.196)	ND(1.96)	-
Indeno(1,2,3-cd)Pyrene	100		100	ND(0.392)	ND(7.84)	-	ND(0.392)	ND(0.392)	ND(3.92)	-
Dibenzo(a,h)anthracene	40		40	ND(0.392)	ND(7.84)	-	ND(0.392)	ND(0.392)	ND(3.92)	-
Benzo(ghi)perylene	20		20	ND(0.392)	ND(7.84)	-	ND(0.392)	ND(0.392)	ND(3.92)	-
Volatile Petroleum Hydrocarbons (ug/l)										
C9-C10 Aromatics	4000	4000	50000	136	**10600**	**14500**	230	627	3840	3660
C5-C8 Aliphatics, Adjusted	3000	3000	50000	ND(50)	2810	**5070**	664	1240	**4710**	**5000**
C9-C12 Aliphatics, Adjusted	5000	5000	50000	ND(50)	2040	3380	79.3	191	1220	992
Benzene	1000	1000	10000	ND(2)	53.5	-	28.4	106	312	-
Toluene	40000	50000	40000	ND(2)	ND(40)	-	2.01	10.3	ND(20)	-
Ethylbenzene	5000	20000	5000	3.57	391	-	10.6	67	1300	-
p/m-Xylene	3000	3000	5000	12.7	1260	-	12.5	51.7	786	-
o-Xylene	3000	3000	5000	2.76	335	-	ND(2)	5.92	26.7	-
Methyl tert butyl ether	5000	50000	50000	ND(3)	ND(60)	-	5.48	19.2	35.4	-
Naphthalene	700	700	20000	7.71	659	-	5.92	21.5	312	-

GW-2-14: MCP 2014 Method 1 GW-2 Groundwater Standards Criteria effective June 20, 2014.
GW-3-14: MCP 2014 Method 1 GW-3 Groundwater Standards Criteria effective June 20, 2014.
RCGW-2-14: MCP 2014 RCGW-2 Reportable Concentrations Criteria effective April 25, 2014.

ND - Not detected in excess of the detection limit
(#) - Detection limit
Bold: exceeds 'compared' value

APPENDIX A:

LIMITATIONS

LIMITATIONS

The purpose of this report is to present a summary of environmental conditions, including the results of testing of groundwater samples obtained from groundwater monitoring wells on the property located at 3 and 5 Washington Street and 165 Corey Road in Brighton, Massachusetts and the development of 43 & 51 Bartlett Crescent 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 MAG910000.

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 analytical 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 5 Washington Square Owner LLC c/o Glouston and Storrs PC. This report and the findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party, other than the submission to relevant governmental agencies, nor used in whole or in part by any other party without prior written consent of McPhail Associates, LLC.

APPENDIX B:

NOTICE OF INTENT TRANSMITTAL FORM

BWSC DEWATERING PERMIT

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

A. General site information:

<table>
<tr><td rowspan="2">1. Name of site:
5 Washington Street</td><td colspan="3">Site address:
Street: 3 and 5 Washington Street and 165 Corey Road in Brighton
43 & 51 Bartlett Crescent in Brookline</td></tr>
<tr><td>City: Brighton and Brookline</td><td>State: MA</td><td>Zip: 02446</td></tr>
<tr><td rowspan="4">2. Site owner
5 Washington Square Owner LLC
c/o Goulston & Storrs PC

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: Justin Krebs</td></tr>
<tr><td colspan="2">Telephone: 617-795-4201</td><td>Email: jkrebs@kigadvisors.com</td></tr>
<tr><td colspan="3">Mailing address: 257 Hillside Avenue
Street:</td></tr>
<tr><td>City: Needham</td><td>State: MA</td><td>Zip: 02494</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
Callahan Construction Inc</td><td colspan="3">Contact Person: Robert Sanda</td></tr>
<tr><td colspan="2">Telephone: 508-279-9524</td><td>Email: rsanda@callahan-inc.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: 80 First Street</td></tr>
<tr><td>City: Bridgewater</td><td>State: MA</td><td>Zip: 02324</td></tr>
<tr><td>4. NPDES permit number assigned by EPA:

NPDES permit is (check all that apply: ☐ RGP ☐ DGP ☐ CGP
☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:</td><td colspan="3">5. Other regulatory program(s) that apply to the site (check all that apply):
■ MA Chapter 21e; list RTN(s): 3-30762
☐ NH Groundwater Management Permit or Groundwater Release Detection Permit:
☐ CERCLA
☐ UIC Program
☐ POTW Pretreatment
☐ CWA Section 404</td></tr>
</table>

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
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 TMDL 156.0 - 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.	0.557
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: 5/17/2019

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: TSS, ammonia, arsenic, lead, iron, chloride, naphthalene, benzene, ethylebenzene, o-xylene, p/m-Xylene	
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) 42.334523, -71.111519
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 07/2019 - 05/2020 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	75	1.47	1.47	Report mg/L	---
Chloride		✔	1	443000	230,000	875000	875000	Report µg/l	---
Total Residual Chlorine	✔		1	121,4500C	50	<DL	<DL	0.2 mg/L	57
Total Suspended Solids		✔	1	1212540D	30,000	21	21	30 mg/L	
Antimony	✔		1	3,200.8	206	<DL	<DL	206 µg/L	
Arsenic		✔	1	3,200.8	10	4.09	4.09	104 µg/L	
Cadmium		✔	1	3,200.8	0.25	<DL	<DL	10.2 µg/L	
Chromium III	✔		1	107,-	74	<DL	<DL	323 µg/L	
Chromium VI	✔		1	1,7196A	11	<DL	<DL	323 µg/L	
Copper	✔		1	3,200.8	9	<DL	<DL	242 µg/L	
Iron		✔	1	19200.7	1,000	10900	10900	5,000 µg/L	2271
Lead		✔	1	3,200.8	2.5	2	2	160 µg/L	
Mercury	✔		1	3,245.1	0.77	<DL	<DL	0.739 µg/L	
Nickel	✔		1	3,200.8	52	<DL	<DL	1,450 µg/L	
Selenium	✔		1	3,200.8	5	<DL	<DL	235.8 µg/L	
Silver	✔		1	3,200.8	3.2	<DL	<DL	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		✔	1	128,624.1	100	2017	2017	100 µg/L	---
Benzene		✔	1	128,624.1	5	27	27	5.0 µg/L	---
1,4 Dioxane	✔		1	128,624.1	50	<DL	<DL	200 µg/L	---
Acetone	✔		1	128,624.1	7.97	<DL	<DL	7.97 mg/L	---
Phenol	✔		1	128,624.1	300	<DL	<DL	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	✔		1	18270D-SI	5.0	<DL	<DL	190 µg/L	
Diethylhexyl phthalate	✔		1	18270D-SI	5.0	<DL	<DL	101 µg/L	
Total Group I PAHs	✔		1	18270D-SI	0.10	<DL	<DL	1.0 µg/L	---
Benzo(a)anthracene	✔		1	18270D-SI	0.10	<DL	<DL	As Total PAHs	
Benzo(a)pyrene	✔		1	18270D-SI	0.10	<DL	<DL		
Benzo(b)fluoranthene	✔		1	18270D-SI	0.10	<DL	<DL		
Benzo(k)fluoranthene	✔		1	18270D-SI	0.10	<DL	<DL		
Chrysene	✔		1	18270D-SI	0.10	<DL	<DL		
Dibenzo(a,h)anthracene	✔		1	18270D-SI	0.10	<DL	<DL		
Indeno(1,2,3-cd)pyrene	✔		1	18270D-SI	0.10	<DL	<DL		

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
Total Group II PAHs		✔	1	18270D-SI	0.10	<DL	<DL	100 µg/L	---
Naphthalene		✔	2	129,625.1	2.5	490	440	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔		1	127,608.3	0.250	<DL	<DL	0.000064 µg/L	---
Pentachlorophenol	✔		1	18270D-SI	0.80	<DL	<DL	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons		✔	1	74,1664A	400	<DL	<DL	5.0 mg/L	---
Ethanol	✔		0					Report mg/L	---
Methyl-tert-Butyl Ether	✔		1	1,8260C	1.0	<DL	<DL	70 µg/L	
tert-Butyl Alcohol	✔		1	1,8260C	10	<DL	<DL	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔		1	1,8260C	2.0	<DL	<DL	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		6.8	6.8		
Hardness - Influent		✔	1		660	285000	285000		
Temp - Influent		✔	1			12.84			
pH - Receiving Water		✔	1	121,4500H		6.9	6.9		
Hardness - Receiving Water		✔	1			133000	133000		
Temp - Receiving Water		✔	1			11.68 C			

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, and granulated activated carbon filter

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: Granulated Activated Carbon

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: 8/12/19
Print Name and Title: Justin Krebs	

Massachusetts Category 5 Waters
"Waters requiring a TMDL"

NAME	SEGMENT ID	DESCRIPTION	SIZE	UNITS	IMPAIRMENT CAUSE	EPA TMDL NO.
Muddy River	MA72-11	Headwaters, outlet Ward Pond in Olmstead Park, Boston through Leverett Pond, Boston/Brookline to confluence with Charles River, Boston.	3.6	MILES	(Bottom Deposits*)	
					(Non-Native Aquatic Plants*)	
					(Other flow regime alterations*)	
					(Physical substrate habitat alterations*)	
					DDT	
					Escherichia coli	32383
					Oil and Grease	
					Other	
					Oxygen, Dissolved	
					PCB in Fish Tissue	
					Phosphorus (Total)	
					Taste and Odor	
					Turbidity	
Populatic Pond	MA72096	Norfolk	41.911	ACRES	Chlordane	
					DDT	
					Dissolved oxygen saturation	40319
					Excess Algal Growth	40319
					Mercury in Fish Tissue	33880
					Nutrient/Eutrophication Biological Indicators	40319
					Oxygen, Dissolved	40319
Powissett Brook	MA72-20	Headwaters, outlet Noannet Pond, Westwood to confluence with Charles River, Dover.	1.849	MILES	Combined Biota/Habitat Bioassessments	
Rock Meadow Brook	MA72-21	Headwaters in Fisher Meadow, Westwood through Stevens Pond and Lee Pond, Westwood to confluence with Charles River, Dedham.	3.771	MILES	Aquatic Macroinvertebrate Bioassessments	
					Aquatic Plants (Macrophytes)	40317
					Excess Algal Growth	40317
					Nutrient/Eutrophication Biological Indicators	40317
					Oxygen, Dissolved	40317
					Phosphorus (Total)	40317
Sawmill Brook	MA72-23	Headwaters, Newton to confluence with Charles River, Boston.	2.397	MILES	Chloride	
					Escherichia coli	32376
					Organic Enrichment (Sewage) Biological Indicators	40317
					Oxygen, Dissolved	40317
					Phosphorus (Total)	40317

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

DEWATERING DISCHARGE PERMIT APPLICATION

OWNER / AUTHORIZED APPLICANT PROVIDE INFORMATION HERE:

Company Name: Callahan Construction Inc Address: 80 First Street Bridgewater MA 02324

Phone Number: 508 279 0012 Fax number: _____

Contact person name: Robert Sanda Title: Project Executive

Cell number: 508 279 9524 Email address: rsanda@callahan-inc.com

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

Owner's Information (if different from above):

Owner of property being dewatered: 5 Washington Square Owner LLC

Owner's mailing address: 257 Hillside Avenue Needham MA 02494 Phone number: 617 795 4201

Location of Discharge & Proposed Treatment System(s):

Street number and name: 5 Washington Street Neighborhood Brighton

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

Describe Proposed Pre-Treatment System(s): Frac Tank, Bag Filters and GAC Filter

BWSC Outfall No. Muddy River Receiving Waters Through Town of Brookline Storm System and outfalls through Area 2 "Tannery Brook" into the Muddy River at Brookline Ave.

Temporary Discharges (Provide Anticipated Dates of Discharge): From 08/2019 To 06/2020

- ☐ Groundwater Remediation
- ☒ Tank Removal/Installation
- ☒ Foundation Excavation
- ☐ Utility/Manhole Pumping
- ☐ Test Pipe
- ☐ Trench Excavation
- ☒ Accumulated Surface Water
- ☐ Hydrogeologic Testing
- ☐ Other _____

Permanent Discharges

- ☐ Foundation Drainage
- ☐ Crawl Space/Footing Drain
- ☐ Accumulated Surface Water
- ☐ Non-contact/Uncontaminated Cooling
- ☐ Non-contact/Uncontaminated Process
- ☐ Other; _____

---

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

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

Signature of Authorized Representative for Property Owner: _____ Date: 8/15/19

APPENDIX C:

DEP PRIORITY RESOURCES MAP

USGS STREAMFLOW STATISTICS REPORT

DILUTION FACTOR AND WQBEL CALCULATIONS

ADDITIONAL NOI SUPPORT INFORMATION

MassDEP - Bureau of Waste Site Cleanup

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

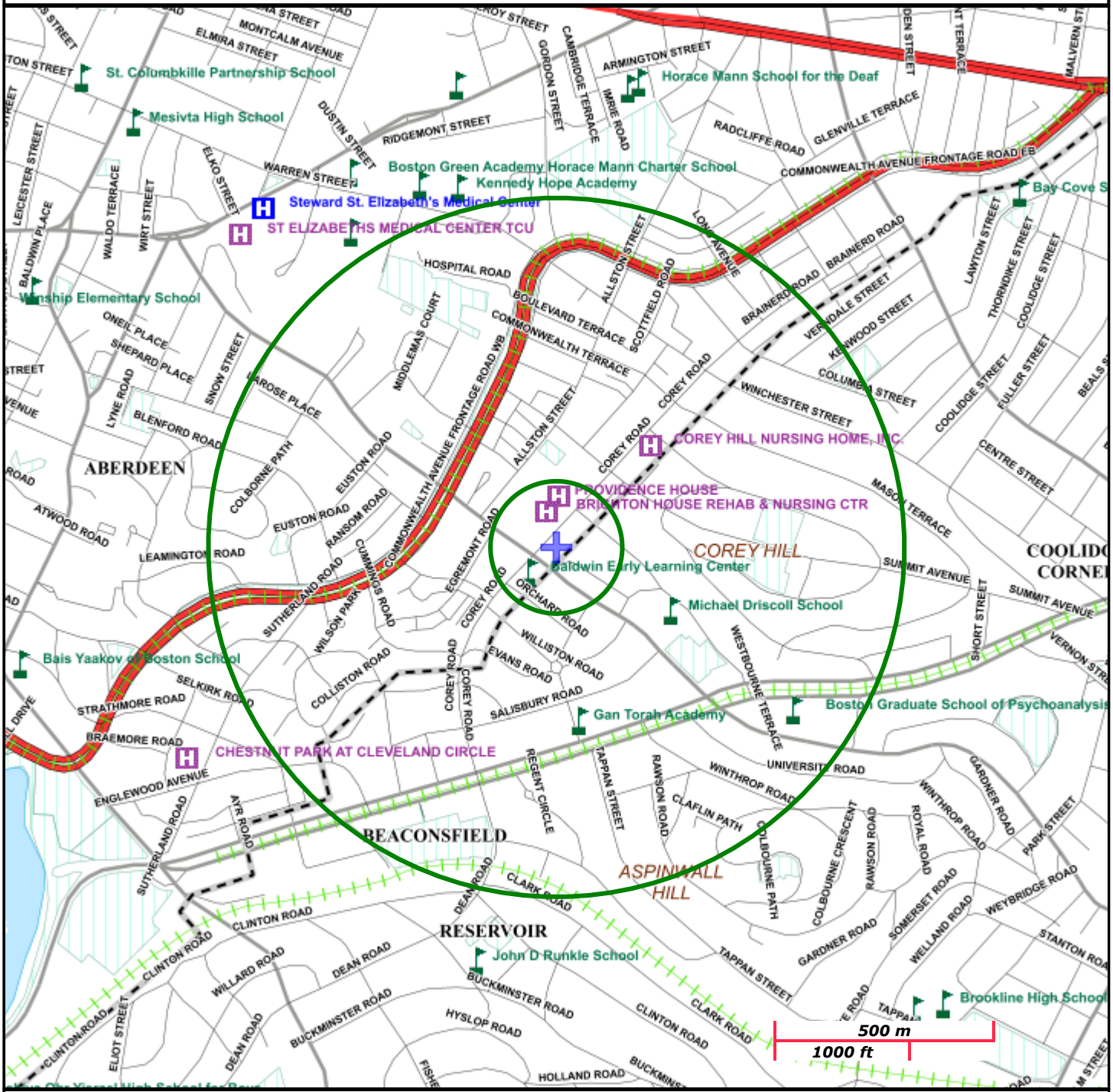
Site Information:

51 BARTLETT CRESCENT #43, BROOKLINE, MA 02446 BROOKLINE, MA

NAD83 UTM Meters:
4690028mN , 323738mE (Zone: 19)
April 8, 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

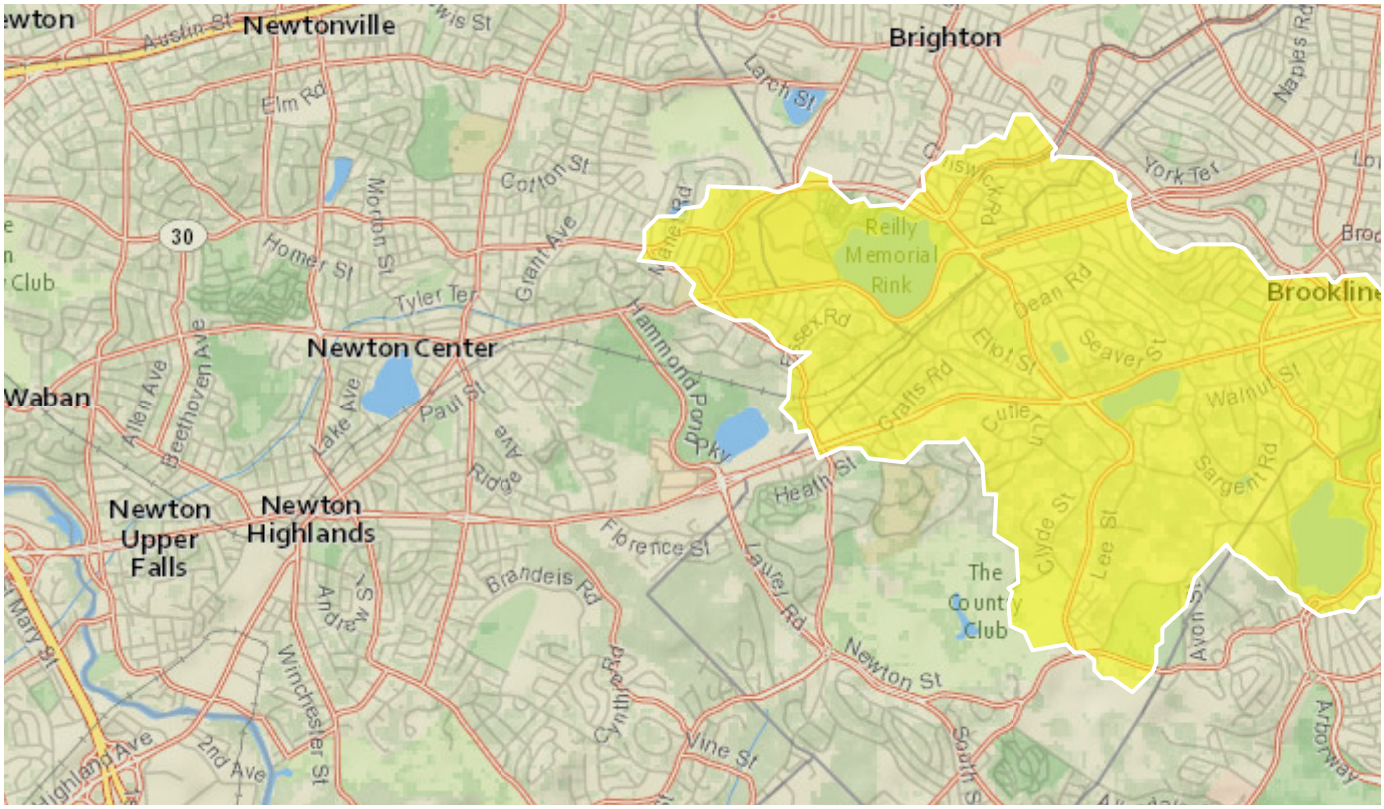
FEMA 100yr Floodplain; Protected Open Space; ACEC

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

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

3&5 Washington Street StreamStats Report

Region ID: MA
Workspace ID: MA20190503145817794000
Clicked Point (Latitude, Longitude): 42.33255, -71.11324
Time: 2019-05-03 10:58:32 -0400



<1 acre

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	4.66	square miles
BSLDEM250	Mean basin slope computed from 1:250K DEM	3.295	percent
DRFTPERSTR	Area of stratified drift per unit of stream length	0.57	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	4.66	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	3.295	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	0.57	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	0.966	ft^3/s	0.215	4.19	49.5	49.5
7 Day 10 Year Low Flow	0.557	ft^3/s	0.101	2.88	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/)

Dilution Factor	6.0			
	TBEL applies if bolded		WQBEL applies if bolded	
A. Inorganics				
Ammonia	**Report**	mg/L	---	
Chloride	**Report**	µg/L	---	
Total Residual Chlorine	0.2	mg/L	**85**	µg/L
Total Suspended Solids	**30**	mg/L	---	
Antimony	**206**	µg/L	4951	µg/L
Arsenic	**104**	µg/L	77	µg/L
Cadmium	**10.2**	µg/L	2.4377	µg/L
Chromium III	**323**	µg/L	788.8	µg/L
Chromium VI	**323**	µg/L	88.5	µg/L
Copper	**242**	µg/L	49.6	µg/L
Iron	5000	µg/L	**4266**	µg/L
Lead	**160**	µg/L	12.57	µg/L
Mercury	**0.739**	µg/L	7.01	µg/L
Nickel	**1450**	µg/L	480.1	µg/L
Selenium	**235.8**	µg/L	38.7	µg/L
Silver	**35.1**	µg/L	41.7	µg/L
Zinc	**420**	µg/L	1000.6	µg/L
Cyanide	**178**	mg/L	40.2	µg/L
B. Non-Halogenated VOCs				
Total BTEX	**100**	µg/L	---	
Benzene	**5.0**	µg/L	---	
1,4 Dioxane	**200**	µg/L	---	
Acetone	**7970**	µg/L	---	
Phenol	**1,080**	µg/L	2321	µg/L
C. Halogenated VOCs				
Carbon Tetrachloride	**4.4**	µg/L	12.4	µg/L
1,2 Dichlorobenzene	**600**	µg/L	---	
1,3 Dichlorobenzene	**320**	µg/L	---	
1,4 Dichlorobenzene	**5.0**	µg/L	---	
Total dichlorobenzene	**---**	µg/L	---	
1,1 Dichloroethane	**70**	µg/L	---	
1,2 Dichloroethane	**5.0**	µg/L	---	
1,1 Dichloroethylene	**3.2**	µg/L	---	
Ethylene Dibromide	**0.05**	µg/L	---	
Methylene Chloride	**4.6**	µg/L	---	
1,1,1 Trichloroethane	**200**	µg/L	---	
1,1,2 Trichloroethane	**5.0**	µg/L	---	
Trichloroethylene	**5.0**	µg/L	---	
Tetrachloroethylene	**5.0**	µg/L	25.5	µg/L
cis-1,2 Dichloroethylene	**70**	µg/L	---	

Vinyl Chloride	**2.0**	µg/L	---	
D. Non-Halogenated SVOCs				
Total Phthalates	190	µg/L	---	µg/L
Diethylhexyl phthalate	**101**	µg/L	17.0	µg/L
Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---	
Benzo(a)anthracene	**1.0**	µg/L	0.0294	µg/L
Benzo(a)pyrene	**1.0**	µg/L	0.0294	µg/L
Benzo(b)fluoranthene	**1.0**	µg/L	0.0294	µg/L
Benzo(k)fluoranthene	**1.0**	µg/L	0.0294	µg/L
Chrysene	**1.0**	µg/L	0.0294	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.0294	µg/L
Indeno(1,2,3-cd)pyrene	**1.0**	µg/L	0.0294	µg/L
Total Group II Polycyclic Aromatic Hydrocarbons	**100**	µg/L	---	
Naphthalene	**20**	µg/L	---	
E. Halogenated SVOCs				
Total Polychlorinated Biphenyls	**0.000064**	µg/L	---	
Pentachlorophenol	**1.0**	µg/L	---	
F. Fuels Parameters				
Total Petroleum Hydrocarbons	**5.0**	mg/L	---	
Ethanol	**Report**	mg/L	---	
Methyl-tert-Butyl Ether	**70**	µg/L	155	µg/L
tert-Butyl Alcohol	**120**	µg/L	---	
tert-Amyl Methyl Ether	**90**	µg/L	---	

United States Department of the Interior

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

In Reply Refer To: April 09, 2019
Consultation Code: 05E1NE00-2019-SLI-1355
Event Code: 05E1NE00-2019-E-03191
Project Name: 3 & 5 Washington Street, 165 Corey Road, and 43 & 51 Bartlett Crescent

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-1355

Event Code: 05E1NE00-2019-E-03191

Project Name: 3 & 5 Washington Street, 165 Corey Road, and 43 & 51 Bartlett Crescent

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/42.34238160446451N71.13992435546436W

Counties: Norfolk, MA | Suffolk, 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.

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Brookline; Street No: 43; Street Name: Bartlett Crescent; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Brookline; Street No: 51; Street Name: Bartlett Crescent; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Boston; Place: Brighton; Street No: 3; Street Name: Washington St; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Boston; Place: Brighton; Street No: 5; Street Name: Washington St; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Boston; Place: Brighton; Street No: 165; Street Name: Corey Rd; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year

APPENDIX D:

LABORATORY ANALYTICAL DATA - GROUNDWATER

ANALYTICAL REPORT

Lab Number:	L1915179
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:	04/22/19

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: L1915179
Report Date: 04/22/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1915179-01	B-117 (OW)	GROUNDWATER	BRIGHTON, MA	04/12/19 11:00	04/12/19

Project Name:	3&5 WASHINGTON STREET	**Lab Number:**	L1915179
Project Number:	5822.9.01	**Report Date:**	04/22/19

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:	3&5 WASHINGTON STREET	**Lab Number:**	L1915179
Project Number:	5822.9.01	**Report Date:**	04/22/19

Case Narrative (continued)

Report Submission

April 22, 2019: This final report includes the results of all requested analyses.

April 22, 2019: This is a preliminary report.

The analysis of Ethanol was subcontracted. A copy of the laboratory report is included as an addendum.

Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

All sample information was obtained from the container labels.

Volatile Organics by Method 624

L1915179-01: The sample has elevated detection limits due to the dilution required by the elevated concentrations of non-target compounds in the sample.

Volatile Organics by SIM

L1915179-01: The sample has an elevated detection limit due to the dilution required by the elevated concentrations of non-target compounds in the sample.

Semivolatile Organics by Method 625

L1915179-01: The sample has elevated detection limits due to the dilution required by the sample matrix.

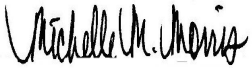
Semivolatile Organics by SIM

L1915179-01: The sample has elevated detection limits due to the dilution required by the sample matrix.

Chlorine, Total Residual

The WG1226125-4 MS recovery (60%), performed on L1915179-01, is outside the acceptance criteria; however, the associated LCS recovery is within criteria. No further action was taken.

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

Authorized Signature:  Michelle M. Morris

Title: Technical Director/Representative Date: 04/22/19

ORGANICS

VOLATILES

Project Name: 3&5 WASHINGTON STREET **Lab Number:** L1915179

Project Number: 5822.9.01 **Report Date:** 04/22/19

SAMPLE RESULTS

Lab ID: L1915179-01 D
Client ID: B-117 (OW)
Sample Location: BRIGHTON, MA

Date Collected: 04/12/19 11:00
Date Received: 04/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater
Analytical Method: 128,624.1
Analytical Date: 04/16/19 19:40
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	27		ug/l	20	--	20
Toluene	ND		ug/l	20	--	20
Ethylbenzene	390		ug/l	20	--	20
p/m-Xylene	1300		ug/l	40	--	20
o-xylene	300		ug/l	20	--	20
Acetone	ND		ug/l	200	--	20
Methyl tert butyl Ether	ND		ug/l	200	--	20
Tert-Butyl Alcohol	ND		ug/l	2000	--	20
Tertiary-Amyl Methyl Ether	ND		ug/l	400	--	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	96		60-140
Fluorobenzene	89		60-140
4-Bromofluorobenzene	104		60-140

Project Name: 3&5 WASHINGTON STREET **Lab Number:** L1915179

Project Number: 5822.9.01 **Report Date:** 04/22/19

SAMPLE RESULTS

Lab ID: L1915179-01 D
Client ID: B-117 (OW)
Sample Location: BRIGHTON, MA

Date Collected: 04/12/19 11:00
Date Received: 04/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater
Analytical Method: 128,624.1-SIM
Analytical Date: 04/16/19 19:40
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM - Westborough Lab						
1,4-Dioxane	ND		ug/l	1000	--	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	97		60-140
4-Bromofluorobenzene	104		60-140

Project Name: 3&5 WASHINGTON STREET **Lab Number:** L1915179

Project Number: 5822.9.01 **Report Date:** 04/22/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 04/16/19 17:49
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1226796-16					
Benzene	ND		ug/l	1.0	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-xylene	ND		ug/l	1.0	--
Acetone	ND		ug/l	10	--
Methyl tert butyl Ether	ND		ug/l	10	--
Tert-Butyl Alcohol	ND		ug/l	100	--
Tertiary-Amyl Methyl Ether	ND		ug/l	20	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	93		60-140
Fluorobenzene	87		60-140
4-Bromofluorobenzene	103		60-140

Project Name: 3&5 WASHINGTON STREET **Lab Number:** L1915179

Project Number: 5822.9.01 **Report Date:** 04/22/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1-SIM
Analytical Date: 04/16/19 17:49
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1227304-4					
1,4-Dioxane	ND		ug/l	50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	94		60-140
4-Bromofluorobenzene	107		60-140

Lab Control Sample Analysis
Batch Quality Control

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

Lab Number: L1915179
Report Date: 04/22/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1226796-15								
Benzene	85		-		65-135	-		61
Toluene	95		-		70-130	-		41
Ethylbenzene	95		-		60-140	-		63
p/m-Xylene	100		-		60-140	-		30
o-xylene	90		-		60-140	-		30
Acetone	92		-		40-160	-		30
Methyl tert butyl Ether	85		-		60-140	-		30
Tert-Butyl Alcohol	92		-		60-140	-		30
Tertiary-Amyl Methyl Ether	70		-		60-140	-		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	97				60-140
Fluorobenzene	98				60-140
4-Bromofluorobenzene	103				60-140

Lab Control Sample Analysis

Batch Quality Control

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

Lab Number: L1915179
Report Date: 04/22/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1227304-3								
1,4-Dioxane	110		-		60-140	-		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Fluorobenzene	105				60-140
4-Bromofluorobenzene	109				60-140

SEMIVOLATILES

Project Name: 3&5 WASHINGTON STREET
Lab Number: L1915179
Project Number: 5822.9.01
Report Date: 04/22/19

SAMPLE RESULTS

Lab ID: L1915179-01 D2
Client ID: B-117 (OW)
Sample Location: BRIGHTON, MA

Date Collected: 04/12/19 11:00
Date Received: 04/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater
Analytical Method: 129,625.1-SIM
Analytical Date: 04/19/19 14:50
Analyst: DV

Extraction Method: EPA 625.1
Extraction Date: 04/18/19 08:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Naphthalene	490		ug/l	4.0	--	40

Project Name: 3&5 WASHINGTON STREET
Project Number: 5822.9.01
Lab Number: L1915179
Report Date: 04/22/19

SAMPLE RESULTS

Lab ID: L1915179-01 D
Client ID: B-117 (OW)
Sample Location: BRIGHTON, MA

Sample Depth:
Matrix: Groundwater
Analytical Method: 129,625.1
Analytical Date: 04/20/19 00:19
Analyst: SZ

Date Collected: 04/12/19 11:00
Date Received: 04/12/19
Field Prep: Not Specified

Extraction Method: EPA 625.1
Extraction Date: 04/18/19 08:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-ethylhexyl)phthalate	ND		ug/l	4.4	--	2
Butyl benzyl phthalate	ND		ug/l	10	--	2
Di-n-butylphthalate	ND		ug/l	10	--	2
Di-n-octylphthalate	ND		ug/l	10	--	2
Diethyl phthalate	ND		ug/l	10	--	2
Dimethyl phthalate	ND		ug/l	10	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	93		42-122
2-Fluorobiphenyl	103		46-121
4-Terphenyl-d14	116		47-138

Project Name: 3&5 WASHINGTON STREET
Project Number: 5822.9.01
Lab Number: L1915179
Report Date: 04/22/19

SAMPLE RESULTS

Lab ID: L1915179-01 D
Client ID: B-117 (OW)
Sample Location: BRIGHTON, MA

Date Collected: 04/12/19 11:00
Date Received: 04/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater
Analytical Method: 129,625.1-SIM
Analytical Date: 04/19/19 14:22
Analyst: DV

Extraction Method: EPA 625.1
Extraction Date: 04/18/19 08:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	1.0	--	10
Fluoranthene	ND		ug/l	1.0	--	10
Naphthalene	390	E	ug/l	1.0	--	10
Benzo(a)anthracene	ND		ug/l	1.0	--	10
Benzo(a)pyrene	ND		ug/l	1.0	--	10
Benzo(b)fluoranthene	ND		ug/l	1.0	--	10
Benzo(k)fluoranthene	ND		ug/l	1.0	--	10
Chrysene	ND		ug/l	1.0	--	10
Acenaphthylene	ND		ug/l	1.0	--	10
Anthracene	ND		ug/l	1.0	--	10
Benzo(ghi)perylene	ND		ug/l	1.0	--	10
Fluorene	ND		ug/l	1.0	--	10
Phenanthrene	ND		ug/l	1.0	--	10
Dibenzo(a,h)anthracene	ND		ug/l	1.0	--	10
Indeno(1,2,3-cd)pyrene	ND		ug/l	1.0	--	10
Pyrene	ND		ug/l	1.0	--	10
Pentachlorophenol	ND		ug/l	10	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	51		25-87
Phenol-d6	38		16-65
Nitrobenzene-d5	103		42-122
2-Fluorobiphenyl	108		46-121
2,4,6-Tribromophenol	87		45-128
4-Terphenyl-d14	136		47-138

Project Name: 3&5 WASHINGTON STREET
Project Number: 5822.9.01
Lab Number: L1915179
Report Date: 04/22/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1-SIM
Analytical Date: 04/19/19 03:37
Analyst: DV

Extraction Method: EPA 625.1
Extraction Date: 04/18/19 08:03

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1227664-1					
Acenaphthene	ND		ug/l	0.10	--
Fluoranthene	ND		ug/l	0.10	--
Naphthalene	ND		ug/l	0.10	--
Benzo(a)anthracene	ND		ug/l	0.10	--
Benzo(a)pyrene	ND		ug/l	0.10	--
Benzo(b)fluoranthene	ND		ug/l	0.10	--
Benzo(k)fluoranthene	ND		ug/l	0.10	--
Chrysene	ND		ug/l	0.10	--
Acenaphthylene	ND		ug/l	0.10	--
Anthracene	ND		ug/l	0.10	--
Benzo(ghi)perylene	ND		ug/l	0.10	--
Fluorene	ND		ug/l	0.10	--
Phenanthrene	ND		ug/l	0.10	--
Dibenzo(a,h)anthracene	ND		ug/l	0.10	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	--
Pyrene	ND		ug/l	0.10	--
Pentachlorophenol	ND		ug/l	1.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	46		25-87
Phenol-d6	27		16-65
Nitrobenzene-d5	72		42-122
2-Fluorobiphenyl	70		46-121
2,4,6-Tribromophenol	63		45-128
4-Terphenyl-d14	92		47-138

Project Name: 3&5 WASHINGTON STREET
Project Number: 5822.9.01
Lab Number: L1915179
Report Date: 04/22/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 04/19/19 17:41
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 04/18/19 08:02

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1227665-1					
Bis(2-ethylhexyl)phthalate	ND		ug/l	2.2	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		42-122
2-Fluorobiphenyl	78		46-121
4-Terphenyl-d14	83		47-138

Lab Control Sample Analysis
Batch Quality Control

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

Lab Number: L1915179
Report Date: 04/22/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1227664-3								
Acenaphthene	72		-		60-132	-		30
Fluoranthene	78		-		43-121	-		30
Naphthalene	65		-		36-120	-		30
Benzo(a)anthracene	72		-		42-133	-		30
Benzo(a)pyrene	72		-		32-148	-		30
Benzo(b)fluoranthene	71		-		42-140	-		30
Benzo(k)fluoranthene	73		-		25-146	-		30
Chrysene	73		-		44-140	-		30
Acenaphthylene	74		-		54-126	-		30
Anthracene	78		-		43-120	-		30
Benzo(ghi)perylene	74		-		1-195	-		30
Fluorene	74		-		70-120	-		30
Phenanthrene	76		-		65-120	-		30
Dibenzo(a,h)anthracene	76		-		1-200	-		30
Indeno(1,2,3-cd)pyrene	72		-		1-151	-		30
Pyrene	87		-		70-120	-		30
Pentachlorophenol	65		-		38-152	-		30

Lab Control Sample Analysis
Batch Quality Control

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

Lab Number: L1915179
Report Date: 04/22/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1227664-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	48				25-87
Phenol-d6	29				16-65
Nitrobenzene-d5	70				42-122
2-Fluorobiphenyl	70				46-121
2,4,6-Tribromophenol	66				45-128
4-Terphenyl-d14	89				47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: 3&5 WASHINGTON STREET
Project Number: 5822.9.01
Lab Number: L1915179
Report Date: 04/22/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1227665-2								
Bis(2-ethylhexyl)phthalate	97		-		29-137	-		30
Butyl benzyl phthalate	109		-		1-140	-		30
Di-n-butylphthalate	103		-		8-120	-		30
Di-n-octylphthalate	105		-		19-132	-		30
Diethyl phthalate	96		-		1-120	-		30
Dimethyl phthalate	96		-		1-120	-		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	86				42-122
2-Fluorobiphenyl	85				46-121
4-Terphenyl-d14	89				47-138

METALS

Project Name: 3&5 WASHINGTON STREET **Lab Number:** L1915179

Project Number: 5822.9.01 **Report Date:** 04/22/19

SAMPLE RESULTS

Lab ID: L1915179-01 Date Collected: 04/12/19 11:00

Client ID: B-117 (OW) Date Received: 04/12/19

Sample Location: BRIGHTON, MA Field Prep: Not Specified

Sample Depth:

Matrix: Groundwater

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	04/15/19 13:20	04/15/19 22:16	EPA 3005A	3,200.8	AM
Arsenic, Total	0.00409		mg/l	0.00100	--	1	04/15/19 13:20	04/15/19 22:16	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	04/15/19 13:20	04/15/19 22:16	EPA 3005A	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	04/15/19 13:20	04/15/19 22:16	EPA 3005A	3,200.8	AM
Copper, Total	ND		mg/l	0.00200	--	1	04/15/19 13:20	04/15/19 22:16	EPA 3005A	3,200.8	AM
Iron, Total	10.9		mg/l	0.050	--	1	04/15/19 13:20	04/15/19 19:22	EPA 3005A	19,200.7	MC
Lead, Total	0.00217		mg/l	0.00100	--	1	04/15/19 13:20	04/15/19 22:16	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	04/15/19 12:37	04/15/19 19:47	EPA 245.1	3,245.1	EA
Nickel, Total	ND		mg/l	0.00200	--	1	04/15/19 13:20	04/15/19 22:16	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	04/15/19 13:20	04/15/19 22:16	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	04/15/19 13:20	04/15/19 22:16	EPA 3005A	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	04/15/19 13:20	04/15/19 22:16	EPA 3005A	3,200.8	AM
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	285		mg/l	0.660	NA	1	04/15/19 13:20	04/15/19 19:22	EPA 3005A	19,200.7	MC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		04/15/19 22:16	NA	107,-	

Project Name: 3&5 WASHINGTON STREET **Lab Number:** L1915179

Project Number: 5822.9.01 **Report Date:** 04/22/19

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: WG1226480-1										
Antimony, Total	ND		mg/l	0.00400	--	1	04/15/19 13:20	04/15/19 20:17	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	04/15/19 13:20	04/15/19 20:17	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	04/15/19 13:20	04/15/19 20:17	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	04/15/19 13:20	04/15/19 20:17	3,200.8	AM
Copper, Total	ND		mg/l	0.00200	--	1	04/15/19 13:20	04/15/19 20:17	3,200.8	AM
Lead, Total	ND		mg/l	0.00100	--	1	04/15/19 13:20	04/15/19 20:17	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	--	1	04/15/19 13:20	04/15/19 20:17	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	04/15/19 13:20	04/15/19 20:17	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	04/15/19 13:20	04/15/19 20:17	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	04/15/19 13:20	04/15/19 20:17	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: WG1226481-1										
Mercury, Total	ND		mg/l	0.00020	--	1	04/15/19 12:37	04/15/19 19:38	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: WG1226484-1										
Iron, Total	ND		mg/l	0.050	--	1	04/15/19 13:20	04/15/19 18:13	19,200.7	MC

Prep Information

Digestion Method: EPA 3005A

Project Name: 3&5 WASHINGTON STREET
Project Number: 5822.9.01
Lab Number: L1915179
Report Date: 04/22/19

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: WG1226484-1										
Hardness	ND		mg/l	0.660	NA	1	04/15/19 13:20	04/15/19 18:13	19,200.7	MC

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: L1915179

Report Date: 04/22/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1226480-2								
Antimony, Total	90		-		85-115	-		
Arsenic, Total	101		-		85-115	-		
Cadmium, Total	110		-		85-115	-		
Chromium, Total	100		-		85-115	-		
Copper, Total	99		-		85-115	-		
Lead, Total	110		-		85-115	-		
Nickel, Total	101		-		85-115	-		
Selenium, Total	105		-		85-115	-		
Silver, Total	101		-		85-115	-		
Zinc, Total	110		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1226481-2								
Mercury, Total	103		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1226484-2								
Iron, Total	105		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1226484-2								
Hardness	101		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

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

Lab Number: L1915179
Report Date: 04/22/19

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: WG1226480-3 QC Sample: L1915030-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.6431	129		-	-		70-130	-		20
Arsenic, Total	0.01500	0.12	0.1409	105		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.04804	94		-	-		70-130	-		20
Chromium, Total	0.01660	0.2	0.2290	106		-	-		70-130	-		20
Copper, Total	0.07948	0.25	0.2972	87		-	-		70-130	-		20
Lead, Total	0.2915	0.51	0.8599	111		-	-		70-130	-		20
Nickel, Total	0.02906	0.5	0.5028	95		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1367	114		-	-		70-130	-		20
Silver, Total	ND	0.05	0.05032	101		-	-		70-130	-		20
Zinc, Total	0.1172	0.5	0.5582	88		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1226480-5 QC Sample: L1915054-09 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.6516	130		-	-		70-130	-		20
Arsenic, Total	0.0406	0.12	0.1724	110		-	-		70-130	-		20
Cadmium, Total	0.00259	0.051	0.06013	113		-	-		70-130	-		20
Chromium, Total	0.0058	0.2	0.2110	103		-	-		70-130	-		20
Copper, Total	0.0976	0.25	0.3507	101		-	-		70-130	-		20
Lead, Total	0.0115	0.51	0.5901	113		-	-		70-130	-		20
Nickel, Total	0.0120	0.5	0.5231	102		-	-		70-130	-		20
Selenium, Total	0.0173	0.12	0.1639	122		-	-		70-130	-		20
Silver, Total	0.0005	0.05	0.05230	104		-	-		70-130	-		20
Zinc, Total	0.1637	0.5	0.7290	113		-	-		70-130	-		20

Matrix Spike Analysis
Batch Quality Control

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

Lab Number: L1915179
Report Date: 04/22/19

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: WG1226481-3 QC Sample: L1915197-01 Client ID: MS Sample										
Mercury, Total	ND	0.005	0.00486	97		-	-	70-130	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1226481-5 QC Sample: L1915179-01 Client ID: B-117 (OW)										
Mercury, Total	ND	0.005	0.00489	98		-	-	70-130	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1226484-3 QC Sample: L1915030-01 Client ID: MS Sample										
Iron, Total	11.7	1	12.2	**50**	Q	-	-	75-125	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1226484-3 QC Sample: L1915030-01 Client ID: MS Sample										
Hardness	4060	66.2	4090	**45**	Q	-	-	75-125	-	20

Lab Duplicate Analysis

Batch Quality Control

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

Lab Number: L1915179
Report Date: 04/22/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1226480-4 QC Sample: L1915030-01 Client ID: DUP Sample						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	0.01500	0.01475	mg/l	2		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	0.01660	0.01710	mg/l	3		20
Copper, Total	0.07948	0.07540	mg/l	5		20
Lead, Total	0.2915	0.2951	mg/l	1		20
Nickel, Total	0.02906	0.02800	mg/l	4		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.1172	0.1166	mg/l	1		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1226480-6 QC Sample: L1915054-09 Client ID: DUP Sample						
Cadmium, Total	0.00259	0.00257	mg/l	1		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1226481-4 QC Sample: L1915197-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1226481-6 QC Sample: L1915179-01 Client ID: B-117 (OW)						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1226484-4 QC Sample: L1915030-01 Client ID: DUP Sample						
Iron, Total	11.7	11.1	mg/l	5		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 3&5 WASHINGTON STREET

Project Number: 5822.9.01

Lab Number: L1915179

Report Date: 04/22/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1226484-4 QC Sample: L1915030-01 Client ID: DUP Sample					
Hardness	4060	4020	mg/l	1	20

INORGANICS
&
MISCELLANEOUS

Project Name: 3&5 WASHINGTON STREET
Project Number: 5822.9.01
Lab Number: L1915179
Report Date: 04/22/19

SAMPLE RESULTS

Lab ID: L1915179-01
Client ID: B-117 (OW)
Sample Location: BRIGHTON, MA
Sample Depth:
Matrix: Groundwater

Date Collected: 04/12/19 11:00
Date Received: 04/12/19
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	21.		mg/l	5.0	NA	1	-	04/16/19 15:45	121,2540D	DR
Cyanide, Total	ND		mg/l	0.005	--	1	04/14/19 17:50	04/15/19 12:47	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	04/13/19 05:41	121,4500CL-D	JW
pH (H)	6.8		SU	-	NA	1	-	04/13/19 09:04	121,4500H+-B	JW
Nitrogen, Ammonia	1.47		mg/l	0.075	--	1	04/15/19 14:32	04/15/19 22:13	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.00	--	1	04/15/19 16:15	04/15/19 22:45	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	04/17/19 03:40	04/18/19 04:15	4,420.1	GD
Chromium, Hexavalent	ND		mg/l	0.010	--	1	04/13/19 05:00	04/13/19 05:18	1,7196A	JW
Anions by Ion Chromatography - Westborough Lab										
Chloride	875.		mg/l	12.5	--	25	-	04/16/19 20:16	44,300.0	AU

Project Name: 3&5 WASHINGTON STREET
Project Number: 5822.9.01
Lab Number: L1915179
Report Date: 04/22/19

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: WG1226073-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	04/13/19 05:00	04/13/19 05:17	1,7196A	JW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1226125-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	04/13/19 05:41	121,4500CL-D	JW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1226303-1										
Cyanide, Total	ND		mg/l	0.005	--	1	04/14/19 17:50	04/15/19 12:28	121,4500CN-CE	LH
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1226445-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	04/15/19 14:32	04/15/19 22:01	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1226558-1										
TPH, SGT-HEM	ND		mg/l	4.00	--	1	04/15/19 16:15	04/15/19 22:45	74,1664A	ML
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1226887-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	04/16/19 15:45	121,2540D	DR
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1227082-1										
Chloride	ND		mg/l	0.500	--	1	-	04/16/19 16:52	44,300.0	AU
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1227221-1										
Phenolics, Total	ND		mg/l	0.030	--	1	04/17/19 03:40	04/18/19 04:11	4,420.1	GD

Lab Control Sample Analysis

Batch Quality Control

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

Lab Number: L1915179
Report Date: 04/22/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1226073-2								
Chromium, Hexavalent	96		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1226125-2								
Chlorine, Total Residual	108		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1226144-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1226303-2								
Cyanide, Total	96		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1226445-2								
Nitrogen, Ammonia	91		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1226558-2								
TPH	90		-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1227082-2								
Chloride	104		-		90-110	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: 3&5 WASHINGTON STREET

Project Number: 5822.9.01

Lab Number: L1915179

Report Date: 04/22/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1227221-2					
Phenolics, Total	101	-	70-130	-	

Matrix Spike Analysis
Batch Quality Control

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

Lab Number: L1915179
Report Date: 04/22/19

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: WG1226073-4 QC Sample: L1915179-01 Client ID: B-117 (OW)												
Chromium, Hexavalent	ND	0.1	0.086	86		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1226125-4 QC Sample: L1915179-01 Client ID: B-117 (OW)												
Chlorine, Total Residual	ND	0.25	0.15	**60**	Q	-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1226303-4 QC Sample: L1914717-02 Client ID: MS Sample												
Cyanide, Total	0.005	0.2	0.190	92		-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1226445-4 QC Sample: L1915030-02 Client ID: MS Sample												
Nitrogen, Ammonia	ND	4	3.71	93		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1226558-4 QC Sample: L1914582-01 Client ID: MS Sample												
TPH	ND	22.2	19.0	86		-	-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227082-3 QC Sample: L1915345-02 Client ID: MS Sample												
Chloride	25.2	4	28.4	**78**	Q	-	-		90-110	-		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227221-4 QC Sample: L1915179-01 Client ID: B-117 (OW)												
Phenolics, Total	ND	0.4	0.42	106		-	-		70-130	-		20

Lab Duplicate Analysis

Batch Quality Control

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

Lab Number: L1915179
Report Date: 04/22/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1226073-3 QC Sample: L1915179-01 Client ID: B-117 (OW)						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1226125-3 QC Sample: L1915179-01 Client ID: B-117 (OW)						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1226144-2 QC Sample: L1914766-01 Client ID: DUP Sample						
pH	7.1	7.1	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1226303-3 QC Sample: L1914717-01 Client ID: DUP Sample						
Cyanide, Total	0.006	0.005	mg/l	10		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1226445-3 QC Sample: L1915030-02 Client ID: DUP Sample						
Nitrogen, Ammonia	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1226558-3 QC Sample: L1914582-01 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1226887-2 QC Sample: L1915121-01 Client ID: DUP Sample						
Solids, Total Suspended	320	320	mg/l	0		29
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227082-4 QC Sample: L1915345-02 Client ID: DUP Sample						
Chloride	25.2	25.3	mg/l	0		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1227221-3 QC Sample: L1915179-01 Client ID: B-117 (OW)						
Phenolics, Total	ND	ND	mg/l	NC		20

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

Lab Number: L1915179
Report Date: 04/22/19

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(*)
L1915179-01A	Vial Na2S2O3 preserved	A	NA		3.6	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1915179-01A1	Vial Na2S2O3 preserved	A	NA		3.6	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1915179-01B	Vial Na2S2O3 preserved	A	NA		3.6	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1915179-01B1	Vial Na2S2O3 preserved	A	NA		3.6	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1915179-01C	Vial Na2S2O3 preserved	A	NA		3.6	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1915179-01C1	Vial Na2S2O3 preserved	A	NA		3.6	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1915179-01D	Vial Na2S2O3 preserved	A	NA		3.6	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1915179-01D1	Vial Na2S2O3 preserved	A	NA		3.6	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1915179-01E	Vial HCl preserved	A	NA		3.6	Y	Absent		SUB-ETHANOL(14)
L1915179-01E1	Vial HCl preserved	A	NA		3.6	Y	Absent		SUB-ETHANOL(14)
L1915179-01E2	Vial HCl preserved	A	NA		3.6	Y	Absent		SUB-ETHANOL(14)
L1915179-01F	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)
L1915179-01G	Plastic 250ml NaOH preserved	A	>12	>12	3.6	Y	Absent		TCN-4500(14)
L1915179-01H	Plastic 500ml H2SO4 preserved	A	<2	<2	3.6	Y	Absent		NH3-4500(28)
L1915179-01I	Plastic 950ml unpreserved	A	7	7	3.6	Y	Absent		CL-300(28),HEXCR-7196(1),TRC-4500(1),PH-4500(.01)
L1915179-01J	Plastic 950ml unpreserved	A	7	7	3.6	Y	Absent		TSS-2540(7)
L1915179-01K	Amber 950ml H2SO4 preserved	A	<2	<2	3.6	Y	Absent		TPHENOL-420(28)
L1915179-01L	Amber 1000ml HCl preserved	A	NA		3.6	Y	Absent		TPH-1664(28)
L1915179-01M	Amber 1000ml HCl preserved	A	NA		3.6	Y	Absent		TPH-1664(28)
L1915179-01N	Amber 1000ml Na2S2O3	A	7	7	3.6	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L1915179-01P	Amber 1000ml Na2S2O3	A	7	7	3.6	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)

*Values in parentheses indicate holding time in days

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

Lab Number: L1915179
Report Date: 04/22/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1915179-01Q	Amber 1000ml Na2S2O3	A	7	7	3.6	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L1915179-01R	Amber 1000ml Na2S2O3	A	7	7	3.6	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L1915179-01S	Amber 1000ml Na2S2O3	A	7	7	3.6	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L1915179-01T	Amber 1000ml Na2S2O3	A	7	7	3.6	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)

*Values in parentheses indicate holding time in days

Project Name:	3&5 WASHINGTON STREET	**Lab Number:**	L1915179
Project Number:	5822.9.01	**Report Date:**	04/22/19

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:**	L1915179
Project Number:	5822.9.01	**Report Date:**	04/22/19

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:**	L1915179
Project Number:	5822.9.01	**Report Date:**	04/22/19

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.

4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

74 Method 1664,Revision A: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, EPA-821-R-98-002, February 1999.

107 Alpha Analytical - In-house calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

128 Method 624.1: Purgeables by GC/MS, EPA 821-R-16-008, December 2016.

129 Method 625.1: Base/Neutrals and Acids by GC/MS, EPA 821-R-16-007, December 2016.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: 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.

Serial_No:04221921:13

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

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

Date Rec'd in Lab: 4/12/19

ALPHA Job #: L1915179

Project Information

Project Name: 3&5 Washington Street

Project Location: Brighton, 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: -

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,	624.1-SIM-RGP (1,4-Dioxane)	ph/ Hardness	625.1		F-TPH, 8260, Sub-Ethanol			Sample Specific Comments	Total # Bottles
15179-01				GW		☒	☒	☒	☒	☒	☒	☒	☒	☐	☒	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
					Container Type	P	P	P	P	P	V	P	A	-	A	-	-		
					Preservative	C	A	D	E	A	B	A	H	-	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
Ian Beckman	4/12/19 12:30	McPhail Hold Fridge	4/12/19 12:30
John S[illegible] AAL	4/12/19 16:15	John S[illegible] AAL	4/12/19 16:15
John S[illegible] AAL	4/12/19 18:09	[illegible]	4/12/19 1809

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)

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

Test America (Nashville)
2960 Foster Creighton Drive
Nashville, TN 37204

Alpha Job Number
L1915179

Client Information

Client: Alpha Analytical Labs
Address: Eight Walkup Drive
Westborough, MA 01581-1019

Phone: 603.319.5010
Email: mgulli@alphalab.com

Project Information

Project Location: MA
Project Manager: Melissa Gulli

Turnaround & Deliverables Information

Due Date:
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:
Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L1915179

Report to include Method Blank, LCS/LCSD:

Additional Comments: Send all results/reports to subreports@alphalab.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	B-117 (OW)	04-12-19 11:00	Groundwater	Ethanol by EPA 1671 Revision A	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
		4/15/19		
Form No: AL_subcoc				

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

Laboratory Job ID: 490-172181-1
Client Project/Site: L1915179

For:
Alpha Analytical Inc
145 Flanders Road
Westborough, Massachusetts 01581-1019

Attn: Melissa Gulli

Authorized for release by:
4/22/2019 2:15:58 PM

Ken Hayes, Project Manager II
(615)301-5035
ken.hayes@testamericainc.com

Table of Contents

Sample Summary

Client: Alpha Analytical Inc
Project/Site: L1915179

Job ID: 490-172181-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-172181-1	B-117 (OW)	Water	04/12/19 11:00	04/16/19 09:00

Case Narrative

Client: Alpha Analytical Inc
Project/Site: L1915179

Job ID: 490-172181-1

Job ID: 490-172181-1

Laboratory: Eurofins TestAmerica, Nashville

Narrative

Job Narrative
490-172181-1

Comments
No additional comments.

Receipt
The sample was received on 4/16/2019 9:00 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.0º C.

GC Semi VOA
Method 1671A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 490-588914.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: Alpha Analytical Inc
Project/Site: L1915179

Job ID: 490-172181-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Alpha Analytical Inc
Project/Site: L1915179

Job ID: 490-172181-1

Client Sample ID: B-117 (OW)

Date Collected: 04/12/19 11:00
Date Received: 04/16/19 09:00

Lab Sample ID: 490-172181-1

Matrix: Water

Method: 1671A - Ethanol (GC/FID)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND		2000	500	ug/L			04/18/19 12:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Isopropyl acetate (Surr)	*73*		*70 - 130*		*04/18/19 12:17*	*1*

QC Sample Results

Client: Alpha Analytical Inc
Project/Site: L1915179

Job ID: 490-172181-1

Method: 1671A - Ethanol (GC/FID)

Lab Sample ID: MB 490-588914/4
Matrix: Water
Analysis Batch: 588914

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND		2000	500	ug/L			04/18/19 11:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Isopropyl acetate (Surr)	*95*		*70 - 130*		*04/18/19 11:52*	*1*

Lab Sample ID: LCS 490-588914/5
Matrix: Water
Analysis Batch: 588914

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethanol			50200	49350		ug/L		98	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Isopropyl acetate (Surr)	*92*		*70 - 130*

Lab Sample ID: LCSD 490-588914/6
Matrix: Water
Analysis Batch: 588914

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethanol			50200	46610		ug/L		93	70 - 130	6	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Isopropyl acetate (Surr)	*95*		*70 - 130*

QC Association Summary

Client: Alpha Analytical Inc
Project/Site: L1915179

Job ID: 490-172181-1

GC VOA

Analysis Batch: 588914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-172181-1	B-117 (OW)	Total/NA	Water	1671A	
MB 490-588914/4	Method Blank	Total/NA	Water	1671A	
LCS 490-588914/5	Lab Control Sample	Total/NA	Water	1671A	
LCSD 490-588914/6	Lab Control Sample Dup	Total/NA	Water	1671A	

Lab Chronicle

Client: Alpha Analytical Inc
Project/Site: L1915179

Job ID: 490-172181-1

Client Sample ID: B-117 (OW)
Date Collected: 04/12/19 11:00
Date Received: 04/16/19 09:00

Lab Sample ID: 490-172181-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	1671A		1			588914	04/18/19 12:17	AAB	TAL NSH

Laboratory References:

TAL NSH = Eurofins TestAmerica, Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Method Summary

Client: Alpha Analytical Inc
Project/Site: L1915179

Job ID: 490-172181-1

Method	Method Description	Protocol	Laboratory
1671A	Ethanol (GC/FID)	EPA	TAL NSH

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL NSH = Eurofins TestAmerica, Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Accreditation/Certification Summary

Client: Alpha Analytical Inc
Project/Site: L1915179

Job ID: 490-172181-1

Laboratory: Eurofins TestAmerica, Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2938	06-30-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
1671A		Water	Ethanol

Maine	State Program	1	TN00032	11-03-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
1671A		Water	Ethanol

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-172181 Chain of Custody

Cooler Received/Opened On 04-16-2019 @ 9:00

Time Samples Removed From Cooler 1600 Time Samples Placed In Storage 1624 (2 Hour Window)

1. Tracking # 1ZE 306 540 19 0587 9556 (last 4 digits, FedEx) Courier: UPS MA

IR Gun ID 31470368 pH Strip Lot N/A Chlorine Strip Lot N/A

2. Temperature of rep. sample or temp blank when opened: 4.0 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where:

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) ACE

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

● ⬅ Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #

I certify that I unloaded the cooler and answered questions 7-14 (intial) ADF

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) ADF

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) ADH

I certify that I attached a label with the unique LIMS number to each container (intial) ADH

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 8/23/17

Subcontract Chain of Custody

Test America (Nashville)
2960 Foster Creighton Drive
Nashville, TN 37204

Alpha Job Number
L1915179

Client Information	Project Information	Regulatory Requirements/Report Limits
Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019 Phone: 603.319.5010 Email: mgulli@alphalab.com	Project Location: MA Project Manager: Melissa Gulli **Turnaround & Deliverables Information** Due Date: Deliverables:	State/Federal Program: Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L1915179

Report to include Method Blank, LCS/LCSD:

Additional Comments: Send all results/reports to subreports@alphalab.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	B-117 (OW)	04-12-19 11:00	Groundwater	Ethanol by EPA 1671 Revision A	

Loc: 490
172181

Relinquished By:	Date/Time:	Received By:	Date/Time:
	4/15/19		4/16/19 900

Form No: AL_subcoc

4.0

APPENDIX E:

LABORATORY ANALYTICAL DATA – SURFACE WATER

LABORATORY ANALYTICAL DATA – HISTORICAL GROUNDWATER

ANALYTICAL REPORT

Lab Number:	L1910812
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	5 WASHINGTON ST.
Project Number:	5822.9.02
Report Date:	03/25/19

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: 5 WASHINGTON ST.
Project Number: 5822.9.02

Lab Number: L1910812
Report Date: 03/25/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1910812-01	B-117 (OW)	GROUNDWATER	BRIGHTON	03/19/19 09:30	03/19/19
L1910812-02	B-116 (OW)	GROUNDWATER	BRIGHTON	03/19/19 10:15	03/19/19
L1910812-03	B-121 (OW)	GROUNDWATER	BRIGHTON	03/19/19 11:30	03/19/19
L1910812-04	B-120 (OW)	GROUNDWATER	BRIGHTON	03/19/19 12:00	03/19/19
L1910812-05	B-119 (OW)	GROUNDWATER	BRIGHTON	03/19/19 13:00	03/19/19

Project Name: 5 WASHINGTON ST. **Lab Number:** L1910812

Project Number: 5822.9.02 **Report Date:** 03/25/19

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is required for "Presumptive Certainty" status		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	YES

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Project Name:	5 WASHINGTON ST.	**Lab Number:**	L1910812
Project Number:	5822.9.02	**Report Date:**	03/25/19

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:	5 WASHINGTON ST.	**Lab Number:**	L1910812
Project Number:	5822.9.02	**Report Date:**	03/25/19

Case Narrative (continued)

MCP Related Narratives

VPH

In reference to question G:

L1910812-01 and -03: One or more of the target analytes did not achieve the requested CAM reporting limits.

EPH

L1910812-03 has elevated detection limits for the target PAH analytes only due to the dilution required by the elevated concentrations of these compounds in the sample.

In reference to question G:

L1910812-01: One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question H:

L1910812-01: The surrogate recovery is below the acceptance criteria for o-terphenyl-ms (0%) due to the dilution required to quantitate the sample. Re-extraction was not required; therefore, the results of the original analysis are reported.

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

Authorized Signature: Michelle M. Morris

Title: Technical Director/Representative Date: 03/25/19

QC OUTLIER SUMMARY REPORT

Project Name: 5 WASHINGTON ST.
Project Number: 5822.9.02

Lab Number: L1910812
Report Date: 03/25/19

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
EPH w/MS Targets - Westborough Lab								
EPH-04-1.1	B-117 (OW)	L1910812-01 D	O-Terphenyl-MS	Surrogate	0	40-140	-	potential low bias

ORGANICS

PETROLEUM HYDROCARBONS

Project Name: 5 WASHINGTON ST. **Lab Number:** L1910812

Project Number: 5822.9.02 **Report Date:** 03/25/19

SAMPLE RESULTS

Lab ID:	L1910812-01	D	Date Collected:	03/19/19 09:30
Client ID:	B-117 (OW)		Date Received:	03/19/19
Sample Location:	BRIGHTON		Field Prep:	Not Specified
Sample Depth:				
Matrix:	Groundwater			
Analytical Method:	131,VPH-18-2.1			
Analytical Date:	03/23/19 00:07			
Analyst:	KJD			

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	2860		ug/l	1000	--	20
C9-C12 Aliphatics	14600		ug/l	1000	--	20
C9-C10 Aromatics	10600		ug/l	1000	--	20
C5-C8 Aliphatics, Adjusted	2810		ug/l	1000	--	20
C9-C12 Aliphatics, Adjusted	2040		ug/l	1000	--	20
Benzene	53.5		ug/l	40.0	--	20
Toluene	ND		ug/l	40.0	--	20
Ethylbenzene	391		ug/l	40.0	--	20
p/m-Xylene	1260		ug/l	40.0	--	20
o-Xylene	335		ug/l	40.0	--	20
Methyl tert butyl ether	ND		ug/l	60.0	--	20
Naphthalene	659		ug/l	80.0	--	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	89		70-130
2,5-Dibromotoluene-FID	96		70-130

Project Name: 5 WASHINGTON ST. **Lab Number:** L1910812

Project Number: 5822.9.02 **Report Date:** 03/25/19

SAMPLE RESULTS

Lab ID:	L1910812-01	D		Date Collected:	03/19/19 09:30
Client ID:	B-117 (OW)			Date Received:	03/19/19
Sample Location:	BRIGHTON			Field Prep:	Not Specified
Sample Depth:					
Matrix:	Groundwater			Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1			Extraction Date:	03/21/19 07:51
Analytical Date:	03/24/19 23:03	M.S. Analytical Date:	03/25/19 12:43	Cleanup Method1:	EPH-04-1
Analyst:	DG	M.S. Analyst:	DV	Cleanup Date1:	03/23/19

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

EPH w/MS Targets - Westborough Lab

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
C9-C18 Aliphatics	2540		ug/l	490	--	5
C19-C36 Aliphatics	583		ug/l	490	--	5
C11-C22 Aromatics	1730		ug/l	490	--	5
C11-C22 Aromatics, Adjusted	1030		ug/l	490	--	5
Naphthalene	454		ug/l	7.84	--	20
2-Methylnaphthalene	246		ug/l	7.84	--	20
Acenaphthylene	ND		ug/l	7.84	--	20
Acenaphthene	ND		ug/l	7.84	--	20
Fluorene	ND		ug/l	7.84	--	20
Phenanthrene	ND		ug/l	7.84	--	20
Anthracene	ND		ug/l	7.84	--	20
Fluoranthene	ND		ug/l	7.84	--	20
Pyrene	ND		ug/l	7.84	--	20
Benzo(a)anthracene	ND		ug/l	7.84	--	20
Chrysene	ND		ug/l	7.84	--	20
Benzo(b)fluoranthene	ND		ug/l	7.84	--	20
Benzo(k)fluoranthene	ND		ug/l	7.84	--	20
Benzo(a)pyrene	ND		ug/l	3.92	--	20
Indeno(1,2,3-cd)Pyrene	ND		ug/l	7.84	--	20
Dibenzo(a,h)anthracene	ND		ug/l	7.84	--	20
Benzo(ghi)perylene	ND		ug/l	7.84	--	20

Project Name: 5 WASHINGTON ST. **Lab Number:** L1910812

Project Number: 5822.9.02 **Report Date:** 03/25/19

SAMPLE RESULTS

Lab ID:	L1910812-01	D	Date Collected:	03/19/19 09:30
Client ID:	B-117 (OW)		Date Received:	03/19/19
Sample Location:	BRIGHTON		Field Prep:	Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/MS Targets - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	66		40-140
o-Terphenyl	60		40-140
2-Fluorobiphenyl	75		40-140
2-Bromonaphthalene	70		40-140
O-Terphenyl-MS	**0**	Q	40-140

Project Name: 5 WASHINGTON ST.
Lab Number: L1910812
Project Number: 5822.9.02
Report Date: 03/25/19

SAMPLE RESULTS

Lab ID:	L1910812-02	Date Collected:	03/19/19 10:15
Client ID:	B-116 (OW)	Date Received:	03/19/19
Sample Location:	BRIGHTON	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Groundwater		
Analytical Method:	131,VPH-18-2.1		
Analytical Date:	03/22/19 23:36		
Analyst:	KJD		

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	179		ug/l	50.0	--	1
C9-C10 Aromatics	136		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
Benzene	ND		ug/l	2.00	--	1
Toluene	ND		ug/l	2.00	--	1
Ethylbenzene	3.57		ug/l	2.00	--	1
p/m-Xylene	12.7		ug/l	2.00	--	1
o-Xylene	2.76		ug/l	2.00	--	1
Methyl tert butyl ether	ND		ug/l	3.00	--	1
Naphthalene	7.71		ug/l	4.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	88		70-130
2,5-Dibromotoluene-FID	96		70-130

Project Name: 5 WASHINGTON ST. **Lab Number:** L1910812

Project Number: 5822.9.02 **Report Date:** 03/25/19

SAMPLE RESULTS

Lab ID:	L1910812-02			Date Collected:	03/19/19 10:15
Client ID:	B-116 (OW)			Date Received:	03/19/19
Sample Location:	BRIGHTON			Field Prep:	Not Specified
Sample Depth:					
Matrix:	Groundwater			Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1			Extraction Date:	03/21/19 07:51
Analytical Date:	03/23/19 19:46	M.S. Analytical Date:	03/23/19 21:03	Cleanup Method1:	EPH-04-1
Analyst:	DG	M.S. Analyst:	DV	Cleanup Date1:	03/23/19

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/MS Targets - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	98.0	--	1
C19-C36 Aliphatics	ND		ug/l	98.0	--	1
C11-C22 Aromatics	ND		ug/l	98.0	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	98.0	--	1
Naphthalene	5.18		ug/l	0.392	--	1
2-Methylnaphthalene	2.00		ug/l	0.392	--	1
Acenaphthylene	ND		ug/l	0.392	--	1
Acenaphthene	ND		ug/l	0.392	--	1
Fluorene	ND		ug/l	0.392	--	1
Phenanthrene	ND		ug/l	0.392	--	1
Anthracene	ND		ug/l	0.392	--	1
Fluoranthene	ND		ug/l	0.392	--	1
Pyrene	ND		ug/l	0.392	--	1
Benzo(a)anthracene	ND		ug/l	0.392	--	1
Chrysene	ND		ug/l	0.392	--	1
Benzo(b)fluoranthene	ND		ug/l	0.392	--	1
Benzo(k)fluoranthene	ND		ug/l	0.392	--	1
Benzo(a)pyrene	ND		ug/l	0.196	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.392	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.392	--	1
Benzo(ghi)perylene	ND		ug/l	0.392	--	1

Project Name: 5 WASHINGTON ST. **Lab Number:** L1910812

Project Number: 5822.9.02 **Report Date:** 03/25/19

SAMPLE RESULTS

Lab ID:	L1910812-02	Date Collected:	03/19/19 10:15
Client ID:	B-116 (OW)	Date Received:	03/19/19
Sample Location:	BRIGHTON	Field Prep:	Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/MS Targets - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	66		40-140
o-Terphenyl	68		40-140
2-Fluorobiphenyl	86		40-140
2-Bromonaphthalene	87		40-140
O-Terphenyl-MS	86		40-140

Project Name: 5 WASHINGTON ST. **Lab Number:** L1910812

Project Number: 5822.9.02 **Report Date:** 03/25/19

SAMPLE RESULTS

Lab ID:	L1910812-03			Date Collected:	03/19/19 11:30
Client ID:	B-121 (OW)			Date Received:	03/19/19
Sample Location:	BRIGHTON			Field Prep:	Not Specified
Sample Depth:					
Matrix:	Groundwater			Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1			Extraction Date:	03/21/19 07:51
Analytical Date:	03/23/19 20:24	M.S. Analytical Date:	03/25/19 13:13	Cleanup Method1:	EPH-04-1
Analyst:	DG	M.S. Analyst:	DV	Cleanup Date1:	03/23/19

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/MS Targets - Westborough Lab						
C9-C18 Aliphatics	359		ug/l	98.0	--	1
C19-C36 Aliphatics	ND		ug/l	98.0	--	1
C11-C22 Aromatics	552		ug/l	98.0	--	1
C11-C22 Aromatics, Adjusted	265		ug/l	98.0	--	1
Naphthalene	215		ug/l	3.92	--	10
2-Methylnaphthalene	72.2		ug/l	3.92	--	10
Acenaphthylene	ND		ug/l	3.92	--	10
Acenaphthene	ND		ug/l	3.92	--	10
Fluorene	ND		ug/l	3.92	--	10
Phenanthrene	ND		ug/l	3.92	--	10
Anthracene	ND		ug/l	3.92	--	10
Fluoranthene	ND		ug/l	3.92	--	10
Pyrene	ND		ug/l	3.92	--	10
Benzo(a)anthracene	ND		ug/l	3.92	--	10
Chrysene	ND		ug/l	3.92	--	10
Benzo(b)fluoranthene	ND		ug/l	3.92	--	10
Benzo(k)fluoranthene	ND		ug/l	3.92	--	10
Benzo(a)pyrene	ND		ug/l	1.96	--	10
Indeno(1,2,3-cd)Pyrene	ND		ug/l	3.92	--	10
Dibenzo(a,h)anthracene	ND		ug/l	3.92	--	10
Benzo(ghi)perylene	ND		ug/l	3.92	--	10

Project Name: 5 WASHINGTON ST. **Lab Number:** L1910812

Project Number: 5822.9.02 **Report Date:** 03/25/19

SAMPLE RESULTS

Lab ID: L1910812-03 Date Collected: 03/19/19 11:30

Client ID: B-121 (OW) Date Received: 03/19/19

Sample Location: BRIGHTON Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/MS Targets - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	57		40-140
o-Terphenyl	60		40-140
2-Fluorobiphenyl	78		40-140
2-Bromonaphthalene	80		40-140
O-Terphenyl-MS	79		40-140

Project Name: 5 WASHINGTON ST. **Lab Number:** L1910812

Project Number: 5822.9.02 **Report Date:** 03/25/19

SAMPLE RESULTS

Lab ID:	L1910812-03	D	Date Collected:	03/19/19 11:30
Client ID:	B-121 (OW)		Date Received:	03/19/19
Sample Location:	BRIGHTON		Field Prep:	Not Specified
Sample Depth:				
Matrix:	Groundwater			
Analytical Method:	131,VPH-18-2.1			
Analytical Date:	03/23/19 00:38			
Analyst:	KJD			

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	5060		ug/l	500	--	10
C9-C12 Aliphatics	7180		ug/l	500	--	10
C9-C10 Aromatics	3840		ug/l	500	--	10
C5-C8 Aliphatics, Adjusted	4710		ug/l	500	--	10
C9-C12 Aliphatics, Adjusted	1220		ug/l	500	--	10
Benzene	312		ug/l	20.0	--	10
Toluene	ND		ug/l	20.0	--	10
Ethylbenzene	1300		ug/l	20.0	--	10
p/m-Xylene	786		ug/l	20.0	--	10
o-Xylene	26.7		ug/l	20.0	--	10
Methyl tert butyl ether	35.4		ug/l	30.0	--	10
Naphthalene	312		ug/l	40.0	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	89		70-130
2,5-Dibromotoluene-FID	94		70-130

Project Name: 5 WASHINGTON ST.
Lab Number: L1910812
Project Number: 5822.9.02
Report Date: 03/25/19

SAMPLE RESULTS

Lab ID:	L1910812-04	Date Collected:	03/19/19 12:00
Client ID:	B-120 (OW)	Date Received:	03/19/19
Sample Location:	BRIGHTON	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Groundwater		
Analytical Method:	131,VPH-18-2.1		
Analytical Date:	03/23/19 01:40		
Analyst:	KJD		

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	1370		ug/l	50.0	--	1
C9-C12 Aliphatics	943		ug/l	50.0	--	1
C9-C10 Aromatics	627		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	1240		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	191		ug/l	50.0	--	1
Benzene	106		ug/l	2.00	--	1
Toluene	10.3		ug/l	2.00	--	1
Ethylbenzene	67.0		ug/l	2.00	--	1
p/m-Xylene	51.7		ug/l	2.00	--	1
o-Xylene	5.92		ug/l	2.00	--	1
Methyl tert butyl ether	19.2		ug/l	3.00	--	1
Naphthalene	21.5		ug/l	4.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	91		70-130
2,5-Dibromotoluene-FID	97		70-130

Project Name: 5 WASHINGTON ST. **Lab Number:** L1910812

Project Number: 5822.9.02 **Report Date:** 03/25/19

SAMPLE RESULTS

Lab ID:	L1910812-04			Date Collected:	03/19/19 12:00
Client ID:	B-120 (OW)			Date Received:	03/19/19
Sample Location:	BRIGHTON			Field Prep:	Not Specified
Sample Depth:					
Matrix:	Groundwater			Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1			Extraction Date:	03/21/19 07:51
Analytical Date:	03/23/19 21:02	M.S. Analytical Date:	03/23/19 22:06	Cleanup Method1:	EPH-04-1
Analyst:	DG	M.S. Analyst:	DV	Cleanup Date1:	03/23/19

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/MS Targets - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	98.0	--	1
C19-C36 Aliphatics	ND		ug/l	98.0	--	1
C11-C22 Aromatics	206		ug/l	98.0	--	1
C11-C22 Aromatics, Adjusted	181		ug/l	98.0	--	1
Naphthalene	6.52		ug/l	0.392	--	1
2-Methylnaphthalene	19.0		ug/l	0.392	--	1
Acenaphthylene	ND		ug/l	0.392	--	1
Acenaphthene	ND		ug/l	0.392	--	1
Fluorene	ND		ug/l	0.392	--	1
Phenanthrene	ND		ug/l	0.392	--	1
Anthracene	ND		ug/l	0.392	--	1
Fluoranthene	ND		ug/l	0.392	--	1
Pyrene	ND		ug/l	0.392	--	1
Benzo(a)anthracene	ND		ug/l	0.392	--	1
Chrysene	ND		ug/l	0.392	--	1
Benzo(b)fluoranthene	ND		ug/l	0.392	--	1
Benzo(k)fluoranthene	ND		ug/l	0.392	--	1
Benzo(a)pyrene	ND		ug/l	0.196	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.392	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.392	--	1
Benzo(ghi)perylene	ND		ug/l	0.392	--	1

Project Name: 5 WASHINGTON ST. **Lab Number:** L1910812

Project Number: 5822.9.02 **Report Date:** 03/25/19

SAMPLE RESULTS

Lab ID: L1910812-04 Date Collected: 03/19/19 12:00

Client ID: B-120 (OW) Date Received: 03/19/19

Sample Location: BRIGHTON Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/MS Targets - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	57		40-140
o-Terphenyl	65		40-140
2-Fluorobiphenyl	85		40-140
2-Bromonaphthalene	86		40-140
O-Terphenyl-MS	83		40-140

Project Name: 5 WASHINGTON ST. **Lab Number:** L1910812

Project Number: 5822.9.02 **Report Date:** 03/25/19

SAMPLE RESULTS

Lab ID:	L1910812-05	Date Collected:	03/19/19 13:00
Client ID:	B-119 (OW)	Date Received:	03/19/19
Sample Location:	BRIGHTON	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Groundwater		
Analytical Method:	131,VPH-18-2.1		
Analytical Date:	03/23/19 02:42		
Analyst:	KJD		

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	700		ug/l	50.0	--	1
C9-C12 Aliphatics	332		ug/l	50.0	--	1
C9-C10 Aromatics	230		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	664		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	79.3		ug/l	50.0	--	1
Benzene	28.4		ug/l	2.00	--	1
Toluene	2.01		ug/l	2.00	--	1
Ethylbenzene	10.6		ug/l	2.00	--	1
p/m-Xylene	12.5		ug/l	2.00	--	1
o-Xylene	ND		ug/l	2.00	--	1
Methyl tert butyl ether	5.48		ug/l	3.00	--	1
Naphthalene	5.92		ug/l	4.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	84		70-130
2,5-Dibromotoluene-FID	90		70-130

Project Name: 5 WASHINGTON ST. **Lab Number:** L1910812

Project Number: 5822.9.02 **Report Date:** 03/25/19

SAMPLE RESULTS

Lab ID:	L1910812-05			Date Collected:	03/19/19 13:00
Client ID:	B-119 (OW)			Date Received:	03/19/19
Sample Location:	BRIGHTON			Field Prep:	Not Specified
Sample Depth:					
Matrix:	Groundwater			Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1			Extraction Date:	03/21/19 07:51
Analytical Date:	03/23/19 21:40	M.S. Analytical Date:	03/25/19 12:11	Cleanup Method1:	EPH-04-1
Analyst:	DG	M.S. Analyst:	DV	Cleanup Date1:	03/23/19

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/MS Targets - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	98.0	--	1
C19-C36 Aliphatics	ND		ug/l	98.0	--	1
C11-C22 Aromatics	ND		ug/l	98.0	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	98.0	--	1
Naphthalene	4.17		ug/l	0.392	--	1
2-Methylnaphthalene	1.50		ug/l	0.392	--	1
Acenaphthylene	ND		ug/l	0.392	--	1
Acenaphthene	ND		ug/l	0.392	--	1
Fluorene	ND		ug/l	0.392	--	1
Phenanthrene	ND		ug/l	0.392	--	1
Anthracene	ND		ug/l	0.392	--	1
Fluoranthene	ND		ug/l	0.392	--	1
Pyrene	ND		ug/l	0.392	--	1
Benzo(a)anthracene	ND		ug/l	0.392	--	1
Chrysene	ND		ug/l	0.392	--	1
Benzo(b)fluoranthene	ND		ug/l	0.392	--	1
Benzo(k)fluoranthene	ND		ug/l	0.392	--	1
Benzo(a)pyrene	ND		ug/l	0.196	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.392	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.392	--	1
Benzo(ghi)perylene	ND		ug/l	0.392	--	1

Project Name: 5 WASHINGTON ST. **Lab Number:** L1910812

Project Number: 5822.9.02 **Report Date:** 03/25/19

SAMPLE RESULTS

Lab ID: L1910812-05 Date Collected: 03/19/19 13:00

Client ID: B-119 (OW) Date Received: 03/19/19

Sample Location: BRIGHTON Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/MS Targets - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	47		40-140
o-Terphenyl	57		40-140
2-Fluorobiphenyl	71		40-140
2-Bromonaphthalene	73		40-140
O-Terphenyl-MS	81		40-140

Project Name: 5 WASHINGTON ST. **Lab Number:** L1910812

Project Number: 5822.9.02 **Report Date:** 03/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 98,EPH-04-1.1
Analytical Date: 03/23/19 12:07
Analyst: DG

M.S. Analytical Date: 03/23/19 15:16
M.S. Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 03/21/19 07:51
Cleanup Method: EPH-04-1
Cleanup Date: 03/23/19

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/MS Targets - Westborough Lab for sample(s): 01-05 Batch: WG1217891-1					
C9-C18 Aliphatics	ND		ug/l	100	--
C19-C36 Aliphatics	ND		ug/l	100	--
C11-C22 Aromatics	ND		ug/l	100	--
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--
Naphthalene	ND		ug/l	0.400	--
2-Methylnaphthalene	ND		ug/l	0.400	--
Acenaphthylene	ND		ug/l	0.400	--
Acenaphthene	ND		ug/l	0.400	--
Fluorene	ND		ug/l	0.400	--
Phenanthrene	ND		ug/l	0.400	--
Anthracene	ND		ug/l	0.400	--
Fluoranthene	ND		ug/l	0.400	--
Pyrene	ND		ug/l	0.400	--
Benzo(a)anthracene	ND		ug/l	0.400	--
Chrysene	ND		ug/l	0.400	--
Benzo(b)fluoranthene	ND		ug/l	0.400	--
Benzo(k)fluoranthene	ND		ug/l	0.400	--
Benzo(a)pyrene	ND		ug/l	0.200	--
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--
Benzo(ghi)perylene	ND		ug/l	0.400	--

Project Name: 5 WASHINGTON ST. **Lab Number:** L1910812

Project Number: 5822.9.02 **Report Date:** 03/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method:	98,EPH-04-1.1		Extraction Method:	EPA 3510C
Analytical Date:	03/23/19 12:07	03/23/19 15:16	Extraction Date:	03/21/19 07:51
Analyst:	DG	DV	Cleanup Method:	EPH-04-1
			Cleanup Date:	03/23/19

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/MS Targets - Westborough Lab for sample(s): 01-05 Batch: WG1217891-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	79		40-140
o-Terphenyl	73		40-140
2-Fluorobiphenyl	83		40-140
2-Bromonaphthalene	84		40-140
O-Terphenyl-MS	88		40-140

Project Name: 5 WASHINGTON ST. **Lab Number:** L1910812

Project Number: 5822.9.02 **Report Date:** 03/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 131,VPH-18-2.1
Analytical Date: 03/22/19 09:03
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 01-05 Batch: WG1218972-4					
C5-C8 Aliphatics	ND		ug/l	50.0	--
C9-C12 Aliphatics	ND		ug/l	50.0	--
C9-C10 Aromatics	ND		ug/l	50.0	--
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--
Benzene	ND		ug/l	2.00	--
Toluene	ND		ug/l	2.00	--
Ethylbenzene	ND		ug/l	2.00	--
p/m-Xylene	ND		ug/l	2.00	--
o-Xylene	ND		ug/l	2.00	--
Methyl tert butyl ether	ND		ug/l	3.00	--
Naphthalene	ND		ug/l	4.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	87		70-130
2,5-Dibromotoluene-FID	95		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 WASHINGTON ST.
Project Number: 5822.9.02

Lab Number: L1910812
Report Date: 03/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/MS Targets - Westborough Lab Associated sample(s): 01-05 Batch: WG1217891-2 WG1217891-3								
C9-C18 Aliphatics	81		82		40-140	1		25
C19-C36 Aliphatics	97		95		40-140	2		25
C11-C22 Aromatics	70		66		40-140	6		25
Naphthalene	75		74		40-140	1		25
2-Methylnaphthalene	57		57		40-140	0		25
Acenaphthylene	90		90		40-140	0		25
Acenaphthene	86		86		40-140	0		25
Fluorene	92		92		40-140	0		25
Phenanthrene	80		78		40-140	3		25
Anthracene	85		84		40-140	1		25
Fluoranthene	100		96		40-140	4		25
Pyrene	100		96		40-140	4		25
Benzo(a)anthracene	107		101		40-140	6		25
Chrysene	94		87		40-140	8		25
Benzo(b)fluoranthene	99		95		40-140	4		25
Benzo(k)fluoranthene	95		89		40-140	7		25
Benzo(a)pyrene	87		82		40-140	6		25
Indeno(1,2,3-cd)Pyrene	94		87		40-140	8		25
Dibenzo(a,h)anthracene	91		82		40-140	10		25
Benzo(ghi)perylene	84		76		40-140	10		25
Nonane (C9)	61		63		30-140	3		25
Decane (C10)	71		72		40-140	1		25
Dodecane (C12)	77		77		40-140	0		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 WASHINGTON ST.
Project Number: 5822.9.02

Lab Number: L1910812
Report Date: 03/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/MS Targets - Westborough Lab Associated sample(s): 01-05 Batch: WG1217891-2 WG1217891-3								
Tetradecane (C14)	81		81		40-140	0		25
Hexadecane (C16)	84		84		40-140	0		25
Octadecane (C18)	88		88		40-140	0		25
Nonadecane (C19)	89		89		40-140	0		25
Eicosane (C20)	90		90		40-140	0		25
Docosane (C22)	91		90		40-140	1		25
Tetracosane (C24)	90		90		40-140	0		25
Hexacosane (C26)	90		90		40-140	0		25
Octacosane (C28)	90		90		40-140	0		25
Triacontane (C30)	92		90		40-140	2		25
Hexatriacontane (C36)	86		86		40-140	0		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	83		83		40-140
o-Terphenyl	64		61		40-140
2-Fluorobiphenyl	71		67		40-140
2-Bromonaphthalene	72		68		40-140
O-Terphenyl-MS	99		97		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 WASHINGTON ST.
Project Number: 5822.9.02

Lab Number: L1910812
Report Date: 03/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-05 Batch: WG1218972-2 WG1218972-3								
C5-C8 Aliphatics	111		109		70-130	2		25
C9-C12 Aliphatics	106		103		70-130	3		25
C9-C10 Aromatics	102		98		70-130	4		25
Benzene	106		102		70-130	4		25
Toluene	106		103		70-130	3		25
Ethylbenzene	109		104		70-130	5		25
p/m-Xylene	109		105		70-130	4		25
o-Xylene	104		101		70-130	3		25
Methyl tert butyl ether	110		107		70-130	3		25
Naphthalene	99		97		70-130	2		25
1,2,4-Trimethylbenzene	102		98		70-130	4		25
Pentane	112		110		70-130	2		25
2-Methylpentane	113		111		70-130	2		25
2,2,4-Trimethylpentane	108		106		70-130	2		25
n-Nonane	111		108		30-130	3		25
n-Decane	103		100		70-130	3		25
n-Butylcyclohexane	103		100		70-130	3		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	99		95		70-130
2,5-Dibromotoluene-FID	105		104		70-130

Project Name: 5 WASHINGTON ST.
Project Number: 5822.9.02

Lab Number: L1910812
Report Date: 03/25/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1910812-01A	Vial HCl preserved	B	NA		2.7	Y	Absent		VPH-DELUX-18(14)
L1910812-01B	Vial HCl preserved	B	NA		2.7	Y	Absent		VPH-DELUX-18(14)
L1910812-01C	Vial HCl preserved	B	NA		2.7	Y	Absent		VPH-DELUX-18(14)
L1910812-01D	Amber 1000ml HCl preserved	A	<2	<2	2.8	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1910812-01E	Amber 1000ml HCl preserved	A	<2	<2	2.8	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1910812-02A	Vial HCl preserved	B	NA		2.7	Y	Absent		VPH-DELUX-18(14)
L1910812-02B	Vial HCl preserved	B	NA		2.7	Y	Absent		VPH-DELUX-18(14)
L1910812-02C	Vial HCl preserved	B	NA		2.7	Y	Absent		VPH-DELUX-18(14)
L1910812-02D	Amber 1000ml HCl preserved	A	<2	<2	2.8	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1910812-02E	Amber 1000ml HCl preserved	A	<2	<2	2.8	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1910812-03A	Vial HCl preserved	B	NA		2.7	Y	Absent		VPH-DELUX-18(14)
L1910812-03B	Vial HCl preserved	B	NA		2.7	Y	Absent		VPH-DELUX-18(14)
L1910812-03C	Vial HCl preserved	B	NA		2.7	Y	Absent		VPH-DELUX-18(14)
L1910812-03D	Amber 1000ml HCl preserved	A	<2	<2	2.8	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1910812-03E	Amber 1000ml HCl preserved	A	<2	<2	2.8	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1910812-04A	Vial HCl preserved	B	NA		2.7	Y	Absent		VPH-DELUX-18(14)
L1910812-04B	Vial HCl preserved	B	NA		2.7	Y	Absent		VPH-DELUX-18(14)
L1910812-04C	Vial HCl preserved	B	NA		2.7	Y	Absent		VPH-DELUX-18(14)
L1910812-04D	Amber 1000ml HCl preserved	A	<2	<2	2.8	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1910812-04E	Amber 1000ml HCl preserved	A	<2	<2	2.8	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1910812-05A	Amber 1000ml HCl preserved	B	<2	<2	2.7	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)
L1910812-05B	Amber 1000ml HCl preserved	B	<2	<2	2.7	Y	Absent		EPH-MS-10(14),EPHD-GC-10(14)

*Values in parentheses indicate holding time in days

Project Name: 5 WASHINGTON ST.
Project Number: 5822.9.02

Lab Number: L1910812
Report Date: 03/25/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1910812-05C	Vial HCl preserved	B	NA		2.7	Y	Absent		VPH-DELUX-18(14)
L1910812-05D	Vial HCl preserved	A	NA		2.8	Y	Absent		VPH-DELUX-18(14)
L1910812-05E	Vial HCl preserved	A	NA		2.8	Y	Absent		VPH-DELUX-18(14)

*Values in parentheses indicate holding time in days

Project Name:	5 WASHINGTON ST.	**Lab Number:**	L1910812
Project Number:	5822.9.02	**Report Date:**	03/25/19

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.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

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

Report Format: Data Usability Report

Project Name:	5 WASHINGTON ST.	**Lab Number:**	L1910812
Project Number:	5822.9.02	**Report Date:**	03/25/19

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:	5 WASHINGTON ST.	**Lab Number:**	L1910812
Project Number:	5822.9.02	**Report Date:**	03/25/19

REFERENCES

98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.

131 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, February 2018, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, June 1, 2018.

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
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 3/19/19

ALPHA Job #: L1910812

Client Information

Client: McPhail Associates, LLC
Address: 2269 Massachusetts Avenue
Cambridge, MA 02140
Phone: (617) 868-1420
Email: MBRADLEY @McPhailgeo.com

Additional Project Information:
☐ Run TCLP (if triggered)

Project Information

Project Name: 5 Washington St.
Project Location: BRIGHTON
Project #: 5522.9.02
Project Manager: MIKE BRADLEY
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH *(only confirmed if pre-approved!)*
Date Due:

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☑ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☑ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☑ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☑ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Sample "Sample ID" Nomenclature: B-100, S-1

ALPHA Lab ID (Lab Use Only)	Sample ID	Sample Depth	Sample Material	Collection Date	Collection Time	Sampler Initials	Soil Assessment Package IV (less VOC)	VOC: ☐ 8260	Total Solids	SVOC: ☐ PAH	EPH: ☑ Ranges & Targets ☐ Ranges Only	VPH: ☑ Ranges & Targets ☐ Ranges Only	TOTAL METALS: ☐ RCRA8 ☐ PP13 ☐ MCP 14	DISSOLVED METALS: ☐ RCRA8 ☐ PP13 ☐ MCP 14	METALS: Total Sb,Be,Ni,Tl,V,Zn	☐ PCBs ☐ Pesticides	RGP Section A Inorganics				SAMPLE INFO *Filtration* ☐ Field ☐ Lab to do *Preservation* ☐ Lab to do Sample Comments	TOTAL # BOTTLES
10812-01	B-117 (ow)		GW	3/19/19	9:30	ImB						✓										3
-01	" "										✓											2
-02	B-116 (ow)				10:15							✓										3
-02	" "										✓											2
-03	B-121 (ow)				11:30							✓										3
-03	" "										✓											2
-04	B-120 (ow)				12:00							✓										3
-04	" "										✓											2
-05	B-119 (ow)				1:00							✓										3
-05	" "		↓	↓		↓					✓											2
											A	A										15
											B	B										25

Container Type
A=Amber glass
B=Bacteria cup
C=Cube
D=BOD bottle
E=Encore
G=Glass
O=Other
P=Plastic
V=Vial

Sample Material
F=Fill S=Sand
O=Organics C=Clay
N=Natural T=Till
GM=Glaciomarine
GW=Groundwater

Preservative
A=None
B=HCl
C=HNO_3
D=H_2SO_4
E=NaOH
F=MeOH
G=$NaHSO_4$
H=$Na_2S_2O_3$
I=Ascorbix Acid
J=NH_4Cl
K=Zn Acetate
O=Other

RGP Section A Inorganics:
Ammonia, Chloride, TRC, TSS, CrVI, CrIII, Total Cyanide, Total RGP Metals

Relinquished By:	Date/Time	Received By:	Date/Time
JM	3/19/19 2:30	McPhail Associates secure sample storage for laboratory pick-up	3/19/19 2:30
McPhail Associates secure sample storage for laboratory pick-up		AAL	3/19/19 1630
AAL	3/19 1800	3/19/19 18 CU	

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

DOC ID: 25188 Rev 0 (11/28/2017)

ANALYTICAL REPORT

Lab Number:	L1912483
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	5 WASHINGTON ST.
Project Number:	5822.9.02
Report Date:	04/03/19

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: 5 WASHINGTON ST.
Project Number: 5822.9.02

Lab Number: L1912483
Report Date: 04/03/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1912483-01	B-117 (OW)	GROUNDWATER	BRIGHTON, MA	03/28/19 11:30	03/28/19
L1912483-02	B-121 (OW)	GROUNDWATER	BRIGHTON, MA	03/28/19 12:30	03/29/19

Project Name:	5 WASHINGTON ST.	**Lab Number:**	L1912483
Project Number:	5822.9.02	**Report Date:**	04/03/19

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is required for "Presumptive Certainty" status		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	YES
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Project Name:	5 WASHINGTON ST.	**Lab Number:**	L1912483
Project Number:	5822.9.02	**Report Date:**	04/03/19

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:	5 WASHINGTON ST.	**Lab Number:**	L1912483
Project Number:	5822.9.02	**Report Date:**	04/03/19

Case Narrative (continued)

MCP Related Narratives

VPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

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: 04/03/19

QC OUTLIER SUMMARY REPORT

Project Name: 5 WASHINGTON ST.
Project Number: 5822.9.02

Lab Number: L1912483
Report Date: 04/03/19

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment

There are no QC Outliers associated with this report.

ORGANICS

PETROLEUM HYDROCARBONS

Project Name: 5 WASHINGTON ST. **Lab Number:** L1912483

Project Number: 5822.9.02 **Report Date:** 04/03/19

SAMPLE RESULTS

Lab ID:	L1912483-01	D	Date Collected:	03/28/19 11:30
Client ID:	B-117 (OW)		Date Received:	03/28/19
Sample Location:	BRIGHTON, MA		Field Prep:	Not Specified
Sample Depth:				
Matrix:	Groundwater			
Analytical Method:	131,VPH-18-2.1			
Analytical Date:	04/03/19 12:01			
Analyst:	MKS			

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	5120		ug/l	1000	--	20
C9-C12 Aliphatics	20400		ug/l	1000	--	20
C9-C10 Aromatics	14500		ug/l	1000	--	20
C5-C8 Aliphatics, Adjusted	5070		ug/l	1000	--	20
C9-C12 Aliphatics, Adjusted	3380		ug/l	1000	--	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	109		70-130
2,5-Dibromotoluene-FID	108		70-130

Project Name: 5 WASHINGTON ST. **Lab Number:** L1912483

Project Number: 5822.9.02 **Report Date:** 04/03/19

SAMPLE RESULTS

Lab ID:	L1912483-02	D	Date Collected:	03/28/19 12:30
Client ID:	B-121 (OW)		Date Received:	03/29/19
Sample Location:	BRIGHTON, MA		Field Prep:	Not Specified
Sample Depth:				
Matrix:	Groundwater			
Analytical Method:	131,VPH-18-2.1			
Analytical Date:	04/03/19 10:40			
Analyst:	MKS			

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	5320		ug/l	500	--	10
C9-C12 Aliphatics	6510		ug/l	500	--	10
C9-C10 Aromatics	3660		ug/l	500	--	10
C5-C8 Aliphatics, Adjusted	5000		ug/l	500	--	10
C9-C12 Aliphatics, Adjusted	992		ug/l	500	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	109		70-130
2,5-Dibromotoluene-FID	109		70-130

Project Name: 5 WASHINGTON ST. **Lab Number:** L1912483

Project Number: 5822.9.02 **Report Date:** 04/03/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 131,VPH-18-2.1
Analytical Date: 04/03/19 10:00
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 01-02 Batch: WG1222623-4					
C5-C8 Aliphatics	ND		ug/l	50.0	--
C9-C12 Aliphatics	ND		ug/l	50.0	--
C9-C10 Aromatics	ND		ug/l	50.0	--
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	98		70-130
2,5-Dibromotoluene-FID	102		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 WASHINGTON ST.
Project Number: 5822.9.02

Lab Number: L1912483
Report Date: 04/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-02 Batch: WG1222623-2 WG1222623-3								
C5-C8 Aliphatics	103		105		70-130	2		25
C9-C12 Aliphatics	104		107		70-130	3		25
C9-C10 Aromatics	97		101		70-130	4		25
Benzene	99		103		70-130	4		25
Toluene	99		104		70-130	5		25
Ethylbenzene	103		107		70-130	4		25
p/m-Xylene	100		104		70-130	4		25
o-Xylene	98		102		70-130	4		25
Methyl tert butyl ether	107		112		70-130	5		25
Naphthalene	98		103		70-130	5		25
1,2,4-Trimethylbenzene	97		101		70-130	4		25
Pentane	100		103		70-130	3		25
2-Methylpentane	103		107		70-130	4		25
2,2,4-Trimethylpentane	105		108		70-130	3		25
n-Nonane	108		112		30-130	4		25
n-Decane	96		100		70-130	3		25
n-Butylcyclohexane	107		111		70-130	4		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	93		98		70-130
2,5-Dibromotoluene-FID	97		102		70-130

Project Name: 5 WASHINGTON ST.
Project Number: 5822.9.02

Lab Number: L1912483
Report Date: 04/03/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
A1	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1912483-01A	Vial HCl preserved	A	NA		2.5	Y	Absent		VPH-18(14)
L1912483-01B	Vial HCl preserved	A	NA		2.5	Y	Absent		VPH-18(14)
L1912483-01C	Vial HCl preserved	A	NA		2.5	Y	Absent		VPH-18(14)
L1912483-02A	Vial HCl preserved	A1	NA		2.5	Y	Absent		VPH-18(14)
L1912483-02B	Vial HCl preserved	A1	NA		2.5	Y	Absent		VPH-18(14)

*Values in parentheses indicate holding time in days

Project Name:	5 WASHINGTON ST.	**Lab Number:**	L1912483
Project Number:	5822.9.02	**Report Date:**	04/03/19

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:	5 WASHINGTON ST.	**Lab Number:**	L1912483
Project Number:	5822.9.02	**Report Date:**	04/03/19

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:	5 WASHINGTON ST.	**Lab Number:**	L1912483
Project Number:	5822.9.02	**Report Date:**	04/03/19

REFERENCES

131 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, February 2018, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, June 1, 2018.

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

Date Rec'd in Lab: 3/29/19

ALPHA Job #: L1912403

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: McPhail Associates, LLC
Address: 2269 Massachusetts Avenue
Cambridge, MA 02140
Phone: (617) 868-1420
Email: @McPhailgeo.com

Project Information

Project Name: 5 WASHINGTON ST
Project Location: BRIGHTON, MA
Project #: 5822.902
Project Manager: MBRADLEY
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due:

Report Information - Data Deliverables

☑ ADEx ☑ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☑ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Additional Project Information:

☐ Run TCLP (if triggered)

Sample "Sample ID" Nomenclature: B-100, S-1

ALPHA Lab ID (Lab Use Only)	Sample ID	Sample Depth	Sample Material	Collection Date	Collection Time	Sampler Initials	Soil Assessment Package IV (less VOC)	VOC: ☐ 8260	Total Solids	SVOC: ☐ PAH	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☑ Ranges Only	TOTAL METALS: ☐ RCRA8 ☐ PP13 ☐ MCP 14	DISSOLVED METALS: ☐ RCRA8 ☐ PP13 ☐ MCP 14	METALS: Total Sb,Be,Ni,Tl,V,Zn	☐ PCBs ☐ Pesticides	RGP Section A Inorganics				SAMPLE INFO Filtration ☐ Field ☐ Lab to do Preservation ☐ Lab to do / Sample Comments	TOTAL # BOTTLES
2483-01	B-117 (OW)	—	GW	3-28-19	1130	TM						X										3
02	B-121 (OW)	—	GW	3-28-19	1230	TM						X										3
Container Type												V										
Preservative												H										

Container Type
A=Amber glass
B=Bacteria cup
C=Cube
D=BOD bottle
E=Encore
G=Glass
O=Other
P=Plastic
V=Vial

Preservative
A=None
B=HCl
C=HNO_3
D=H_2SO_4
E=NaOH
F=MeOH
G=$NaHSO_4$
H=$Na_2S_2O_3$
I=Ascorbix Acid
J=NH_4Cl
K=Zn Acetate
O=Other

Sample Material
F=Fill S=Sand
O=Organics C=Clay
N=Natural T=Till
GM=Glaciomarine
GW=Groundwater

RGP Section A Inorganics: *Ammonia, Chloride, TRC, TSS, CrVI, CrIII, Total Cyanide, Total RGP Metals*

Relinquished By:	Date/Time	Received By:	Date/Time
	3/29/19 13	TM	3-29-19 1600
McPhail Associates secure sample storage for laboratory pick-up		McPhail Associates secure sample storage for laboratory pick-up	
TM	3-28-19 1740		3/29/19 17.40

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

DOC ID: 25188 Rev 0 (11/28/2017)

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 3/29/19

ALPHA Job #: L1912483

Client Information

Client: McPhail Associates, LLC
Address: 2269 Massachusetts Avenue
Cambridge, MA 02140
Phone: (617) 868-1420
Email: @McPhailgeo.com

Project Information

Project Name: 5822.9.02
Project Location: SWASHINGTON SQUARE
Project #: BRIGHTON MA
Project Manager: MR BRADLEY
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH *(only confirmed if pre-approved!)*
Date Due:

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☑ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Additional Project Information:

☐ Run TCLP (if triggered)

SAMPLE NOT PICKED UP ON 3-28-19 - SHOULD BE INCLUDED ON L1912483 - THANK YOU MR

Sample "Sample ID" Nomenclature: B-100, S-1

ALPHA Lab ID (Lab Use Only)	Sample ID	Sample Depth	Sample Material	Collection Date	Collection Time	Sampler Initials	Soil Assessment Package IV (less VOC)	VOC: ☐ 8260	Total Solids	SVOC: ☐ PAH	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☑ Ranges Only	TOTAL METALS: ☐ RCRA8 ☐ PP13 ☐ MCP 14	DISSOLVED METALS: ☐ RCRA8 ☐ PP13 ☐ MCP 14	METALS: Total Sb,Be,Ni,Tl,V,Zn	☐ PCBs ☐ Pesticides	RGP Section A Inorganics				SAMPLE INFO *Filtration* ☐ Field ☐ Lab to do *Preservation* ☐ Lab to do Sample Comments	TOTAL # BOTTLES
12483-02	B-121 (OW)			3-28-19	1230	TC						X										

Container Type
A=Amber glass
B=Bacteria cup
C=Cube
D=BOD bottle
E=Encore
G=Glass
O=Other
P=Plastic
V=Vial

Preservative
A=None
B=HCl
C=HNO_3
D=H_2SO_4
E=NaOH
F=MeOH
G=$NaHSO_4$
H=$Na_2S_2O_3$
I=Ascorbix Acid
J=NH_4Cl
K=Zn Acetate
O=Other

Sample Material
F=Fill S=Sand
O=Organics C=Clay
N=Natural T=Till
GM=Glaciomarine
GW=Groundwater

RGP Section A Inorganics:
Ammonia, Chloride, TRC, TSS, CrVI, CrIII, Total Cyanide, Total RGP Metals

	Container Type	Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
MR 1000	3-29-19	McPhail Associates secure sample storage for laboratory pick-up	
McPhail Associates secure sample storage for laboratory pick-up	3/29/19 1615	JGriedman AAL	3/29/19 1615
JGriedman AAL	3/29/19 1745		3/29/19 1745

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

DOC ID: 25188 Rev 0 (11/28/2017)

ANALYTICAL REPORT

Lab Number:	L1912483
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	5 WASHINGTON ST.
Project Number:	5822.9.02
Report Date:	04/03/19

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: 5 WASHINGTON ST.
Project Number: 5822.9.02

Lab Number: L1912483
Report Date: 04/03/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1912483-01	B-117 (OW)	GROUNDWATER	BRIGHTON, MA	03/28/19 11:30	03/28/19
L1912483-02	B-121 (OW)	GROUNDWATER	BRIGHTON, MA	03/28/19 12:30	03/29/19

Project Name:	5 WASHINGTON ST.	**Lab Number:**	L1912483
Project Number:	5822.9.02	**Report Date:**	04/03/19

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is required for "Presumptive Certainty" status		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	YES
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Project Name:	5 WASHINGTON ST.	**Lab Number:**	L1912483
Project Number:	5822.9.02	**Report Date:**	04/03/19

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:	5 WASHINGTON ST.	**Lab Number:**	L1912483
Project Number:	5822.9.02	**Report Date:**	04/03/19

Case Narrative (continued)

MCP Related Narratives

VPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

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: 04/03/19

QC OUTLIER SUMMARY REPORT

Project Name: 5 WASHINGTON ST.
Project Number: 5822.9.02

Lab Number: L1912483
Report Date: 04/03/19

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment

There are no QC Outliers associated with this report.

ORGANICS

PETROLEUM HYDROCARBONS

Project Name: 5 WASHINGTON ST. **Lab Number:** L1912483

Project Number: 5822.9.02 **Report Date:** 04/03/19

SAMPLE RESULTS

Lab ID:	L1912483-01	D	Date Collected:	03/28/19 11:30
Client ID:	B-117 (OW)		Date Received:	03/28/19
Sample Location:	BRIGHTON, MA		Field Prep:	Not Specified
Sample Depth:				
Matrix:	Groundwater			
Analytical Method:	131,VPH-18-2.1			
Analytical Date:	04/03/19 12:01			
Analyst:	MKS			

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	5120		ug/l	1000	--	20
C9-C12 Aliphatics	20400		ug/l	1000	--	20
C9-C10 Aromatics	14500		ug/l	1000	--	20
C5-C8 Aliphatics, Adjusted	5070		ug/l	1000	--	20
C9-C12 Aliphatics, Adjusted	3380		ug/l	1000	--	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	109		70-130
2,5-Dibromotoluene-FID	108		70-130

Project Name: 5 WASHINGTON ST. **Lab Number:** L1912483

Project Number: 5822.9.02 **Report Date:** 04/03/19

SAMPLE RESULTS

Lab ID:	L1912483-02	D	Date Collected:	03/28/19 12:30
Client ID:	B-121 (OW)		Date Received:	03/29/19
Sample Location:	BRIGHTON, MA		Field Prep:	Not Specified
Sample Depth:				
Matrix:	Groundwater			
Analytical Method:	131,VPH-18-2.1			
Analytical Date:	04/03/19 10:40			
Analyst:	MKS			

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	5320		ug/l	500	--	10
C9-C12 Aliphatics	6510		ug/l	500	--	10
C9-C10 Aromatics	3660		ug/l	500	--	10
C5-C8 Aliphatics, Adjusted	5000		ug/l	500	--	10
C9-C12 Aliphatics, Adjusted	992		ug/l	500	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	109		70-130
2,5-Dibromotoluene-FID	109		70-130

Project Name: 5 WASHINGTON ST. **Lab Number:** L1912483

Project Number: 5822.9.02 **Report Date:** 04/03/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 131,VPH-18-2.1
Analytical Date: 04/03/19 10:00
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 01-02 Batch: WG1222623-4					
C5-C8 Aliphatics	ND		ug/l	50.0	--
C9-C12 Aliphatics	ND		ug/l	50.0	--
C9-C10 Aromatics	ND		ug/l	50.0	--
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	98		70-130
2,5-Dibromotoluene-FID	102		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 WASHINGTON ST.
Project Number: 5822.9.02

Lab Number: L1912483
Report Date: 04/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-02 Batch: WG1222623-2 WG1222623-3								
C5-C8 Aliphatics	103		105		70-130	2		25
C9-C12 Aliphatics	104		107		70-130	3		25
C9-C10 Aromatics	97		101		70-130	4		25
Benzene	99		103		70-130	4		25
Toluene	99		104		70-130	5		25
Ethylbenzene	103		107		70-130	4		25
p/m-Xylene	100		104		70-130	4		25
o-Xylene	98		102		70-130	4		25
Methyl tert butyl ether	107		112		70-130	5		25
Naphthalene	98		103		70-130	5		25
1,2,4-Trimethylbenzene	97		101		70-130	4		25
Pentane	100		103		70-130	3		25
2-Methylpentane	103		107		70-130	4		25
2,2,4-Trimethylpentane	105		108		70-130	3		25
n-Nonane	108		112		30-130	4		25
n-Decane	96		100		70-130	3		25
n-Butylcyclohexane	107		111		70-130	4		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	93		98		70-130
2,5-Dibromotoluene-FID	97		102		70-130

Project Name: 5 WASHINGTON ST.
Project Number: 5822.9.02

Lab Number: L1912483
Report Date: 04/03/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
A1	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1912483-01A	Vial HCl preserved	A	NA		2.5	Y	Absent		VPH-18(14)
L1912483-01B	Vial HCl preserved	A	NA		2.5	Y	Absent		VPH-18(14)
L1912483-01C	Vial HCl preserved	A	NA		2.5	Y	Absent		VPH-18(14)
L1912483-02A	Vial HCl preserved	A1	NA		2.5	Y	Absent		VPH-18(14)
L1912483-02B	Vial HCl preserved	A1	NA		2.5	Y	Absent		VPH-18(14)

*Values in parentheses indicate holding time in days

Project Name:	5 WASHINGTON ST.	**Lab Number:**	L1912483
Project Number:	5822.9.02	**Report Date:**	04/03/19

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:	5 WASHINGTON ST.	**Lab Number:**	L1912483
Project Number:	5822.9.02	**Report Date:**	04/03/19

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:	5 WASHINGTON ST.	**Lab Number:**	L1912483
Project Number:	5822.9.02	**Report Date:**	04/03/19

REFERENCES

131 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, February 2018, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, June 1, 2018.

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

Date Rec'd in Lab: 3/29/19

ALPHA Job #: L1912403

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: McPhail Associates, LLC
Address: 2269 Massachusetts Avenue
Cambridge, MA 02140
Phone: (617) 868-1420
Email: @McPhailgeo.com

Project Information

Project Name: 5 WASHINGTON ST
Project Location: BRIGHTON, MA
Project #: 5822.902
Project Manager: MBRADLEY
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due:

Report Information - Data Deliverables

☑ ADEx ☑ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☑ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Additional Project Information:

☐ Run TCLP (if triggered)

Sample "Sample ID" Nomenclature: B-100, S-1

ALPHA Lab ID (Lab Use Only)	Sample ID	Sample Depth	Sample Material	Collection Date	Collection Time	Sampler Initials	Soil Assessment Package IV (less VOC)	VOC: ☐ 8260	Total Solids	SVOC: ☐ PAH	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☑ Ranges Only	TOTAL METALS: ☐ RCRA8 ☐ PP13 ☐ MCP 14	DISSOLVED METALS: ☐ RCRA8 ☐ PP13 ☐ MCP 14	METALS: Total Sb,Be,Ni,Tl,V,Zn	☐ PCBs ☐ Pesticides	RGP Section A Inorganics				SAMPLE INFO Filtration ☐ Field ☐ Lab to do Preservation ☐ Lab to do / Sample Comments	TOTAL # BOTTLES
2483-01	B-117 (OW)	—	GW	3-28-19	1130	TM						X										3
02	B-121 (OW)	—	GW	3-28-19	1230	TM						X										3
Container Type												V										
Preservative												H										

Container Type
A=Amber glass
B=Bacteria cup
C=Cube
D=BOD bottle
E=Encore
G=Glass
O=Other
P=Plastic
V=Vial

Preservative
A=None
B=HCl
C=HNO_3
D=H_2SO_4
E=NaOH
F=MeOH
G=$NaHSO_4$
H=$Na_2S_2O_3$
I=Ascorbix Acid
J=NH_4Cl
K=Zn Acetate
O=Other

Sample Material
F=Fill S=Sand
O=Organics C=Clay
N=Natural T=Till
GM=Glaciomarine
GW=Groundwater

RGP Section A Inorganics: *Ammonia, Chloride, TRC, TSS, CrVI, CrIII, Total Cyanide, Total RGP Metals*

Relinquished By:	Date/Time	Received By:	Date/Time
	3/29/19 13	TM	3-29-19 1600
McPhail Associates secure sample storage for laboratory pick-up		McPhail Associates secure sample storage for laboratory pick-up	
TM	3-28-19 1740		3/29/19 17.40

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

DOC ID: 25188 Rev 0 (11/28/2017)

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 3/29/19

ALPHA Job #: L1912483

Client Information

Client: McPhail Associates, LLC
Address: 2269 Massachusetts Avenue
Cambridge, MA 02140
Phone: (617) 868-1420
Email: @McPhailgeo.com

Project Information

Project Name: 5822.9.02
Project Location: SWASHINGTON SQUARE
Project #: BRIGHTON MA
Project Manager: MR BRADLEY
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH *(only confirmed if pre-approved!)*
Date Due:

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☑ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Additional Project Information:

☐ Run TCLP (if triggered)

SAMPLE NOT PICKED UP ON 3-28-19 - SHOULD BE INCLUDED ON L1912483 - THANK YOU MR

Sample "Sample ID" Nomenclature: B-100, S-1

ALPHA Lab ID (Lab Use Only)	Sample ID	Sample Depth	Sample Material	Collection Date	Collection Time	Sampler Initials	Soil Assessment Package IV (less VOC)	VOC: ☐ 8260	Total Solids	SVOC: ☐ PAH	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☑ Ranges Only	TOTAL METALS: ☐ RCRA8 ☐ PP13 ☐ MCP 14	DISSOLVED METALS: ☐ RCRA8 ☐ PP13 ☐ MCP 14	METALS: Total Sb,Be,Ni,Tl,V,Zn	☐ PCBs ☐ Pesticides	RGP Section A Inorganics				SAMPLE INFO *Filtration* ☐ Field ☐ Lab to do *Preservation* ☐ Lab to do Sample Comments	TOTAL # BOTTLES
12483-02	B-121 (OW)			3-28-19	1230	TC						X										

Container Type
A=Amber glass
B=Bacteria cup
C=Cube
D=BOD bottle
E=Encore
G=Glass
O=Other
P=Plastic
V=Vial

Preservative
A=None
B=HCl
C=HNO_3
D=H_2SO_4
E=NaOH
F=MeOH
G=$NaHSO_4$
H=$Na_2S_2O_3$
I=Ascorbix Acid
J=NH_4Cl
K=Zn Acetate
O=Other

Sample Material
F=Fill S=Sand
O=Organics C=Clay
N=Natural T=Till
GM=Glaciomarine
GW=Groundwater

RGP Section A Inorganics:
Ammonia, Chloride, TRC, TSS, CrVI, CrIII, Total Cyanide, Total RGP Metals

	Container Type	Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
MR 1000	3-29-19	McPhail Associates secure sample storage for laboratory pick-up	
McPhail Associates secure sample storage for laboratory pick-up	3/29/19 1615	JGriedman AAL	3/29/19 1615
JGriedman AAL	3/29/19 1745		3/29/19 1745

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

DOC ID: 25188 Rev 0 (11/28/2017)

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 #: L1919134

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

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	RGP Metals (200.8) (A)	TSS,hardness, pH	Ammonia (4500 (A))	TCN (A)	CrVI,CrIII,								Sample Specific Comments	TOTAL # BOTTLES
19134-01	Muddy River RGP Sample	4/25/19	9:00	SW	JSW	☒	☒	☒	☒	☒	☐	☐	☐	☐	☐	☐	☐		5
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
					Container Type	P	P	P	P	P	-	-	-	-	-	-	-		
					Preservative	C	A	D	E	A	-	-	-	-	-	-	-		

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 the 3 and 5 Washington Street and 165 Corey Road in Brighton, 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 from the BWSC, a single discharge flow path adjacent to the site flow to a primary discharge outfall location. The primary discharge location is into the Muddy River near the intersection of River Road and Brookline Avenue according to the BWSC. Dewatering effluent treatment will consist of a settling tank, bag filters, and a Granulated Activated Carbon (GAC) filter to remove suspended particulates and organic compounds for 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, GAC filter, 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 closest body of water is the Dorchester Old Harbor located approximately 9,000 feet to

the east of the subject site. Dewatering effluent will be pumped into a settling tank. Water within the settling tank will be pumped through bag filters and GAC filter 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 filters will be replaced/disposed of as necessary.