HALEY & ALDRICH, INC.
465 Medford Street, Suite 2200
Boston, MA 02129
(617) 886.7400

29 March 2022
File No. 0200676-000

U.S. Environmental Protection Agency
Office of Ecosystem Protection
5 Post Office Square, Suite 100 (OEP06-01)
Boston, Massachusetts 02109-3912

Attention: Shauna Little, EPA/OEP RGP Coordinator

Subject: NPDES RGP NOI Application
Temporary Construction Dewatering
109 Brookline Avenue Development
Boston, Massachusetts

Ladies and Gentlemen:

Haley & Aldrich, Inc. (Haley & Aldrich) has prepared this submission to facilitate off-site discharge of temporary construction dewatering effluent planned in support of the proposed 109 Brookline Avenue development located in Boston, Massachusetts. Refer to Figure 1 for a Project Locus. On behalf of the Owner, IQHQ-109 Brookline, LLC, and the Operator/General Contractor, Suffolk Construction Company, Inc., and in accordance with the 2017 National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) in Massachusetts, MAG910000, Haley & Aldrich submits this Notice of Intent (NOI) and the applicable documentation as required by the U.S. Environmental Protection Agency (EPA) for discharge of temporary construction site dewatering effluent under the NPDES RGP.

We anticipate temporary construction dewatering will be conducted, as necessary, to facilitate below-grade construction in-the-dry. As defined in Table 1 of the NPDES RGP, the Activity Category is III.G (Contaminated Site Dewatering, Sites with Known Contamination). A copy of the completed NOI form is enclosed as Appendix A.

EXISTING SITE CONDITIONS

The site is located at 109 Brookline Avenue in Boston, Massachusetts. The site is bordered by Overland Street to the north, Brookline Avenue to the east, the Residence Inn at 121 Brookline Avenue followed by Burlington Avenue to the south, and 20 Overland Street (a commercial building) to the west; refer to Figure 2. The existing three-story building with a partial below-grade basement occupies the majority of the site and was constructed in 1915. Site grades vary from about El. 16 to El. 17[1]. The existing building

[1] Elevations reported herein are in feet and reference the Boston City Base (BCB) Datum.

is reportedly supported on concrete belled caissons bearing at the top of the Marine Sand deposits underlying the site.

PROPOSED CONSTRUCTION

Our current understanding of the proposed development is based on the GMP Set drawings dated 25 February 2022 and recent discussions with the project team. At this time, we understand the existing 109 Brookline Avenue building that currently occupies the site will be demolished and a new 10-story building with one level of roof-top mechanical space will be constructed in its place. The proposed development is planned to include two levels of below-grade parking; the lowest level slab is planned at about 29.5 feet (ft) below adjacent site grades, corresponding to approximately El. -12.5.

Excavation to construct the proposed below-grade space and building foundations is anticipated to be required to a depth of about 31 ft below ground surface (bgs), corresponding to about El. -14. Construction within the limits of 109 Brookline Avenue will require removal of buried structures and foundations of the building that currently occupies the site.

A steel-reinforced, load-bearing concrete diaphragm wall (slurry wall) is planned to provide groundwater cut-off and temporary excavation support as well as serve as the permanent perimeter foundation wall. Column loads will be supported on load bearing elements (LBEs) bearing in bedrock underlying the site.

SITE HISTORY

Haley & Aldrich assessed past usage of the property and adjoining properties through a review of Sanborn Fire Insurance Maps, aerial photographs and building permit records. The subject site was originally developed in the late 19th century and occupied by several three-story row houses. The row houses were demolished, and the existing three-story brick building was constructed along Overland Street in 1915. By 1937, the building was vacant. The building was later partially used as a retail store with a loft above between 1951 and 1968. The commercial building was then occupied by a health center in 1988 and transitioned to office use by 2011.

ENVIRONMENTAL CONDITIONS AND REGULATORY BACKGROUND

Results of recent soil samples collected for the purposes of soil precharacterization prior to off-site removal of excess soil indicate that soil contains compounds at concentrations above the applicable RCS-1 Reportable Concentrations for soil under the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000. A summary of the soil quality data is provided below:

- Concentrations of total petroleum hydrocarbons (TPH) were detected in several soil samples above the MCP RCS-1 Reportable Concentrations.
- Concentrations of arsenic and lead were detected in one soil sample (HA21-B3_0.0-5.0) above the MCP RCS-1 Reportable Concentrations. Arsenic was also detected in one additional sample (HA22-A2_10-15) above the MCP RCS-1 Reportable Concentrations.
- Concentrations of semi-volatile organic compounds (SVOCs), particularly several polycyclic aromatic hydrocarbons (PAHs), including 2-Methylnaphthalene, Acenaphthylene,

Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenz(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Naphthalene and Phenanthrene, were detected in several soil samples above the MCP RCS-1 Reportable Concentrations.

Based on soil analytical results, the site is a Massachusetts Department of Environmental Protection (MassDEP) Disposal Site. A 120-day Release Notification Form (RNF) was prepared and submitted to MassDEP on 3 February 2022, and Release Tracking Number (RTN) 3-37272 was assigned to the site.

TEMPORARY CONSTRUCTION DEWATERING NOTICE OF INTENT (NOI)

One (1) groundwater sample was collected from observation well HA21-B3 on 8 November 2021 and submitted to Alpha Analytical (Alpha) of Westborough, Massachusetts to support the subject NPDES RGP NOI. The location of the observation well is shown on Figure 2. The groundwater sample was submitted for chemical analysis of volatile organic compounds (VOCs), SVOCs, TPH, total metals (including antimony, arsenic, cadmium, chromium, copper, iron, lead, mercury, nickel, selenium, silver and zinc), hexavalent and trivalent chromium, polychlorinated biphenyls (PCBs), Ammonia, Hardness, Total Suspended Solids (TSS), Total Phenols, Total Chloride, Total Residual Chlorine (TRC) and Total Cyanide.

Measurements of pH and temperature were obtained in the field on the sampling date indicated above. Refer to Table I for a summary of the groundwater analytical data. The results did not indicate any concentrations of constituents above applicable MCP RCGW-2 Reportable Concentrations or NPDES RGP Effluent Limitations.

When excavations to construct proposed foundations and other site improvements extend beneath site groundwater levels, dewatering will be necessary to control groundwater, seepage, precipitation, surface water runoff, and construction-generated water to enable below-grade construction activities in-the-dry. Construction dewatering effluent that will be discharged off-site will be managed under the NPDES RGP. We estimate effluent discharge rates of a maximum of 50 gallons per minute (gpm). The duration of temporary construction dewatering is anticipated to be approximately two years, starting in July 2022 and continuing through approximately July 2024.

Temporary construction dewatering will be conducted from sumps located within excavations. Prior to discharge, collected water will be routed through a baffled sedimentation tank and bag filters to remove suspended solids and undissolved constituents, including metals, to within the limits established by the permit. Total flow will be measured with a flow meter/totalizer. If necessary to meet NPDES RGP Effluent Limitations, supplemental pre-treatment may include oil/water separators, pH control to adjust the pH to within the limits established by the permit, and/or other components as required; refer to Figure 4 for a schematic of the proposed treatment system as understood at this time.

Discharge of dewatering effluent will be to the storm drain operated by the Boston Water and Sewer Commission (BWSC) beneath the streets surrounding the property, leading to the 116-in. x 120-in. Muddy River Conduit beneath Brookline Avenue, after which the effluent will discharge at outfall SDO

042 to the Charles River. The proposed discharge route is shown on Figures 3A and 3B. Appendix B includes a copy of the BWSC Dewatering Discharge Permit Application.

RECEIVING WATER QUALITY INFORMATION

On 8 November 2021, Haley & Aldrich collected a receiving water sample from the Charles River at outfall SDO 042 shown on Figures 3A and 3B using a disposable polyethylene bailer. The surface water sample was submitted to Alpha for chemical analysis of ammonia, total hardness and total metals. Measurements of pH and temperature were obtained in the field on the sampling date indicated. The results of the receiving water quality data are included in Table I.

Results were used to calculate the site Water Quality Based Effluent Limitations (WQBELs). It is our understanding that since the receiving water is a freshwater body, salinity does not need to be analyzed for either the effluent water or receiving water.

EFFLUENT CRITERIA AND DILUTION FACTOR DETERMINATION

The EPA-suggested WQBEL Calculation spreadsheet was used to calculate the Effluent Limitations for the site. Groundwater and receiving water data were input, and the resulting criteria were tabulated in the attached Table I. As requested by EPA, the Microsoft Excel spreadsheet for the WQBEL calculations will be submitted to the EPA via email for their review upon submission of this NOI. Copies of the "EnterData" and "FreshwaterResults" tabs from the Microsoft Excel file are included in Appendix C.

The Seven Day Ten Year (7Q10) low flow of the Charles River at the outfall location was determined to be 24.7 cubic feet per second (cfs), corresponding to 15.96 million gallons per day (MGD), using the U.S. Geological Survey (USGS) StreamStats program and confirmed by MassDEP. We have also confirmed with MassDEP that the dilution factor for the project is 222.7. The StreamStats Report, dilution factor calculations and confirmation from MassDEP are included in Appendix C.

DETERMINATION OF ENDANGERED SPECIES ACT ELIGIBILITY

In accordance with the Endangered Species Act (ESA) guidelines outlined in Appendix I of the 2017 NPDES RGP, a preliminary determination for the action area associated with this project was established using the U.S. Fish and Wildlife Service (FWS) Information, Planning, and Conservation (IPaC) online system; a copy of the determination is attached in Appendix D. Based on the results of the determination, the project and action area are considered to meet FWS Criterion A as no listed species or critical habitat have been established to be present within the project action area. One candidate species, the Monarch Butterfly, was listed within the project area, but no critical habitats have been established. Additionally, a MassDEP Phase 1 Site Assessment Map is included in Appendix D which confirms that no critical habitats are present at the subject site.

DOCUMENTATION OF NATIONAL HISTORIC PRESERVATION ACT ELIGIBILITY REQUIREMENTS

Based on a review of the resources provided by the U.S. National Register of Historic Places and a review of the Massachusetts Cultural Resource Information System (MACRIS), no historic properties have been established to be present at the project site, and discharges and discharge-related activities are not considered to have the potential to affect historic properties. The discharge is considered to meet Criterion A. Documentation is included in Appendix E.

Note that the Olmstead Park System (Property ID 71000086) is located approximately 0.2 miles to the south of the project site. This series of parks is part of the Boston Historic District, the limits of which are shown on the National Register of Historic Places map included in Appendix E. Additional information on the Olmstead Park System is also included in Appendix E.

OWNER AND OPERATOR INFORMATION

Owner:
IQHQ-109 Brookline, LLC
One Boston Place
201 Washington Street, Suite 3920
Boston, Massachusetts 02108
Attn: William Ashton
Title: Director of Development

Operator:
Suffolk Construction Company, Inc.
65 Allerton Street
Boston, Massachusetts 02119
Attn: Joel Perry
Title: Project Executive

An earthwork subcontractor (Site Contractor) will be hired by the Operator/General Contractor to conduct the site work, including dewatering activities. Haley & Aldrich will be on-site to monitor the Contractors' site work on behalf of the Owner and will conduct sampling and testing of the dewatering system influent and effluent in accordance with the NPDES RGP compliance requirements.

APPENDICES

The completed "Suggested Format for the Remediation General Permit Notice of Intent (NOI)" form is enclosed in Appendix A. Appendix B provides a copy of the BWSC Dewatering Discharge Permit Application. Appendix C includes tabs from the WQBEL calculation spreadsheet and dilution factor calculations and documentation. Appendices D and E include the Endangered Species Act documentation and National Register of Historic Places and Massachusetts Historical Commission documentation, respectively. The groundwater and receiving water laboratory data report is provided in Appendix F.

The Site Contractor has not yet submitted their construction dewatering submittal, which will include details of the proposed dewatering system along with Safety Data Sheets (SDSs) and fact sheets for possible chemical additives (if needed to adjust pH or reduce suspended sediments). If required, this information will be submitted to the EPA using a Notice of Change (NOC). A Best Management Practices Plan (BMPP), which outlines the proposed discharge operations covered under the RGP, will be available at the site.

CLOSING

Thank you for considering this NPDES RGP NOI. Please feel free to contact the undersigned should you require additional information or have questions.

Sincerely yours,
HALEY & ALDRICH, INC.

Taylor L. Cairns
Assistant Project Manager

Jennifer L. Sweet, P.E. (MA), LSP
Senior Associate | Program Manager

Attachments:

Table I – Summary of Water Quality Data
Figure 1 – Project Locus
Figure 2 – Site and Subsurface Exploration Location Plan
Figure 3A – Proposed Dewatering Discharge Route
Figure 3B – Proposed Dewatering Discharge Location
Figure 4 – Proposed Treatment System Schematic
Appendix A – Remediation General Permit Notice of Intent
Appendix B – BWSC Dewatering Discharge Permit Application
Appendix C – Effluent Limitations and Dilution Factor Calculations
Appendix D – Endangered Species Act Documentation
Appendix E – National Register of Historic Places and Massachusetts Historical Commission Documentation
Appendix F – Laboratory Data Report

c: IQHQ-109 Brookline, LLC, Attn: William Ashton
Suffolk Construction Company, Inc.; Attn: Joel Perry
Boston Water and Sewer Commission; Attn: Jodi Dobay, Francis McLaughlin
Massachusetts Department of Environmental Protection; Attn: Catherine Coniaris

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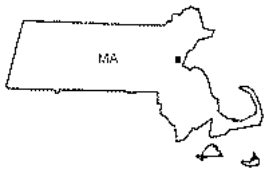
TABLE I
SUMMARY OF WATER QUALITY DATA
109 BROOKLINE AVENUE
BOSTON, MASSACHUSETTS
FILE NO. 0200676-000

	Action Level			
Location Name	2017 NPDES RGP Effluent Limitations	2014 MassDEP MCP RCGW-2 Reportable Concentrations	HA21-B3	Charles River SDO 042
Sample Name			HA21-B3_20211108	RECEIVING WATER_20211108
Sample Date			11/08/2021	11/08/2021
Lab Sample ID			L2161430-01	L2161430-02
Well Screen Interval (ft, BCB) (Note 4)			El. 1.5 to El. -8.5	NA
Groundwater Elevation (ft, BCB) (Note 5)			5.8	NA
Sample Type			Groundwater	Receiving Water
Volatile Organic Compounds (ug/L)				
1,1,1-Trichloroethane	200	4000	ND (2)	-
1,1,2-Trichloroethane	5	900	ND (1.5)	-
1,1-Dichloroethane	70	2000	ND (1.5)	-
1,1-Dichloroethene	3.2	80	ND (1)	-
1,2-Dibromoethane (Ethylene Dibromide)	0.05	2	ND (0.01)	-
1,2-Dichlorobenzene	600	2000	ND (5)	-
1,2-Dichloroethane	5	5	ND (1.5)	-
1,3-Dichlorobenzene	320	6000	ND (5)	-
1,4-Dichlorobenzene	5	60	ND (5)	-
Acetone	7970	50000	ND (10)	-
Benzene	5	1000	ND (1)	-
Carbon tetrachloride	4.4	2	ND (1)	-
cis-1,2-Dichloroethene	70	20	ND (1)	-
Ethylbenzene	NA	5000	ND (1)	-
m,p-Xylenes	NA	3000	ND (2)	-
Methyl Tert Butyl Ether (MTBE)	70	5000	ND (10)	-
Methylene chloride (Dichloromethane)	4.6	2000	ND (1)	-
o-Xylene	NA	3000	ND (1)	-
Tert-Amyl Methyl Ether (TAME)	90	NA	ND (20)	-
Tert-Butyl Alcohol (tert-Butanol)	120	NA	ND (100)	-
Tetrachloroethene	5	50	ND (1)	-
Toluene	NA	40000	ND (1)	-
Trichloroethene	5	5	ND (1)	-
Vinyl chloride	2	2	ND (1)	-
Xylene (total)	NA	3000	ND (1)	-
Total BTEX	100	NA	ND	-
Volatile Organic Compounds SIM (ug/L)				
1,4-Dioxane	200	6000	ND (5)	-
Semi-Volatile Organic Compounds (ug/L)				
bis(2-Ethylhexyl)phthalate (Diethylhexyl phthalate)	101	50000	ND (2.2)	-
Butyl benzylphthalate	NA	10000	ND (5)	-
Diethyl phthalate	NA	9000	ND (5)	-
Dimethyl phthalate	NA	50000	ND (5)	-
Di-n-butylphthalate	NA	5000	ND (5)	-
Di-n-octyl phthalate	NA	100000	ND (5)	-
Total Phthalates	190	NA	ND	-
Semi-Volatile Organic Compounds (SIM) (ug/L)				
Acenaphthene	NA	6000	0.516	-
Acenaphthylene	NA	40	ND (0.1)	-
Anthracene	NA	30	ND (0.1)	-
Benzo(a)anthracene	1	1000	ND (0.1)	-
Benzo(a)pyrene	1	500	ND (0.1)	-
Benzo(b)fluoranthene	1	400	ND (0.1)	-
Benzo(g,h,i)perylene	NA	20	ND (0.1)	-
Benzo(k)fluoranthene	1	100	ND (0.1)	-
Chrysene	1	70	ND (0.1)	-
Dibenz(a,h)anthracene	1	40	ND (0.1)	-
Fluoranthene	NA	200	ND (0.1)	-
Fluorene	NA	40	0.16	-
Indeno(1,2,3-cd)pyrene	1	100	ND (0.1)	-
Naphthalene	20	700	ND (0.1)	-
Pentachlorophenol	1	200	ND (1)	-
Phenanthrene	NA	10000	ND (0.1)	-
Pyrene	NA	20	ND (0.1)	-
Total Group I Polycyclic Aromatic Hydrocarbons	1	NA	ND	-
Total Group II Polycyclic Aromatic Hydrocarbons	100	NA	0.676	-
Ethanol (mg/L)	Report	NA	ND (20)	-
Total Petroleum Hydrocarbons (mg/L)	5	5	ND (4)	-
Metals (mg/L)				
Antimony, Total	0.206	8	ND (0.004)	ND (0.004)
Arsenic, Total	0.104	0.9	0.00153	ND (0.001)
Cadmium, Total	0.0102	0.004	ND (0.0002)	ND (0.0002)
Chromium, Total	NA	0.3	ND (0.001)	ND (0.001)
Chromium III (Trivalent), Total	0.323	0.6	ND (0.01)	ND (0.01)
Chromium VI (Hexavalent), Total	0.323	0.3	ND (0.01)	ND (0.01)
Copper, Total	0.242	100	ND (0.001)	0.00152
Iron, Total	5	NA	3.95	0.65
Lead, Total	0.16	0.01	ND (0.001)	0.00118
Mercury, Total	0.000739	0.02	ND (0.0002)	ND (0.0002)
Nickel, Total	1.45	0.2	0.00213	ND (0.002)
Selenium, Total	0.2358	0.1	ND (0.005)	ND (0.005)
Silver, Total	0.0351	0.007	ND (0.0004)	ND (0.0004)
Zinc, Total	0.42	0.9	0.01604	0.01119
Polychlorinated Biphenyls (ug/L)				
Aroclor-1016 (PCB-1016)	NA	5	ND (0.25)	-
Aroclor-1221 (PCB-1221)	NA	5	ND (0.25)	-
Aroclor-1232 (PCB-1232)	NA	5	ND (0.25)	-
Aroclor-1242 (PCB-1242)	NA	5	ND (0.25)	-
Aroclor-1248 (PCB-1248)	NA	5	ND (0.25)	-
Aroclor-1254 (PCB-1254)	NA	5	ND (0.25)	-
Aroclor-1260 (PCB-1260)	NA	5	ND (0.2)	-
SUM of Polychlorinated Biphenyls	6.40E-05	5	ND	-
Other				
Ammonia, Total (mg/L)	Report	NA	2.54	0.133
Chloride, Total (mg/L)	Report	NA	3650	-
Total Residual Chlorine (mg/L)	0.2	NA	ND (0.04)	-
Cyanide, Total (mg/L)	178	0.03	ND (0.005)	-
Hardness, Total (mg/L)	NA	NA	691	52.1
Total Phenols (mg/L)	1.08	NA	ND (0.03)	-
Total Suspended Solids (TSS) (mg/L)	30	NA	10	-
pH (SU) (Note 6)	6.5 to 8.3	NA	6.54	7.45
Temperature (°C) (Note 7)	28.33	NA	18	8.1

ABBREVIATIONS AND NOTES:
µg/L: micrograms per liter
mg/L: milligrams per liter
-: Not Analyzed
MassDEP: Massachusetts Department of Environmental Protection
MCP: 310 CMR 40.0000 Massachusetts Contingency Plan effective 25 April 2014; revisions 23 May 2014
NA: Not Applicable
ND (2.5): Not detected, number in parentheses is the laboratory reporting limit
RGP: Remediation General Permit
SU: Standard Units

1. For test methods used, see the laboratory data report.
2. **Bold** values indicate an exceedance of the applicable NPDES RGP Effluent Limitations, determined in accordance with the procedures outlined in the EPA-suggested Water Quality Based Effluent Limitation (WQBEL) Calculation spreadsheet.
3. **Bold ND** values indicate the laboratory reporting limit exceeds the applicable NPDES RGP Effluent Limitation.
4. Elevations are in feet and refer to the Boston City Base (BCB) Datum.
5. Groundwater elevation measured in the field on the sample date indicated.
6. Receiving water and groundwater pH measured in the field on the sample date indicated.
7. Receiving water and groundwater temperature measured in the field on the sample date indicated.

SITE COORDINATES: 42°20'46"N, 71°06'01"W



MAP SOURCE: USGS

HALEY ALDRICH

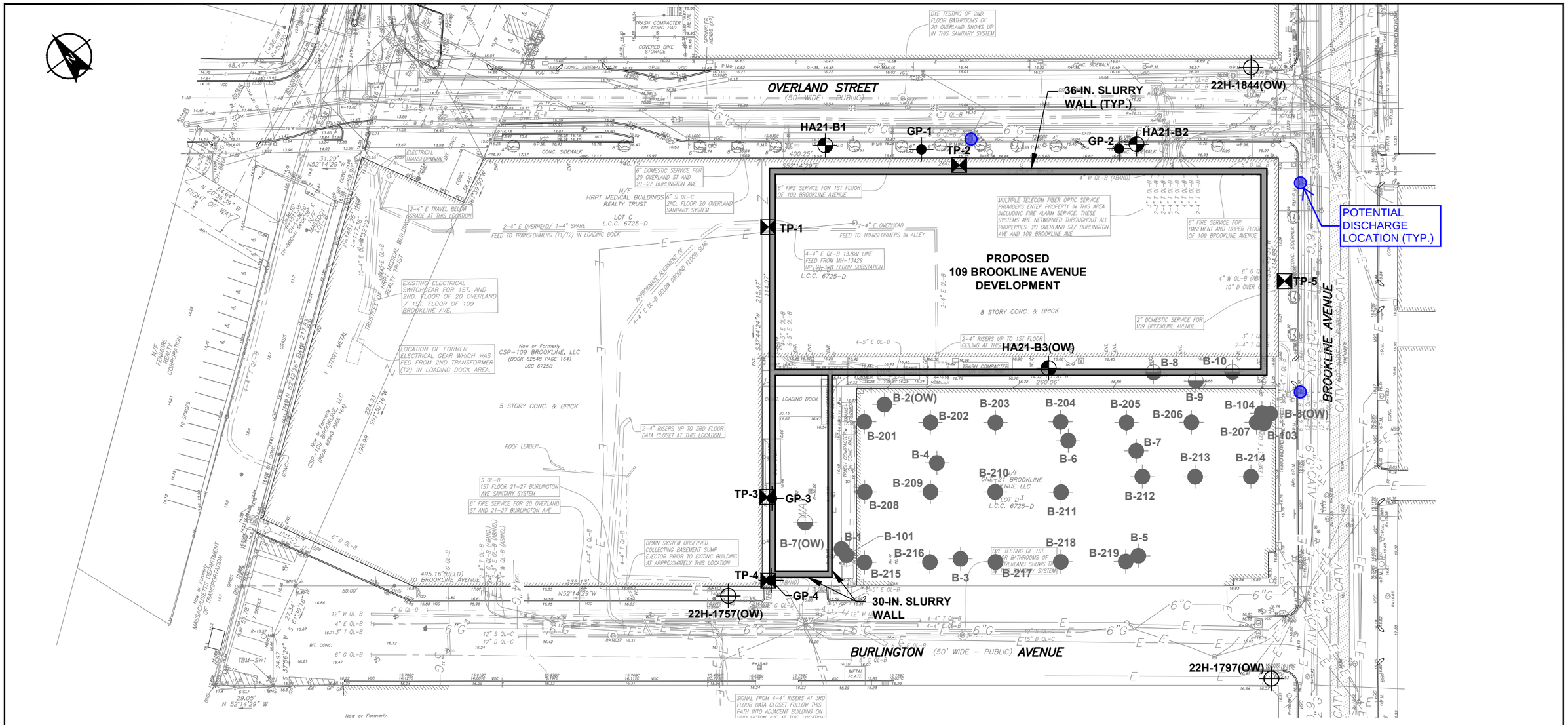
109 BROOKLINE AVENUE
BOSTON, MASSACHUSETTS

PROJECT LOCUS

APPROXIMATE SCALE: 1 INCH = 2,000 FEET
MARCH 2022

FIGURE 1

0200676_000_LOCUS HALEYALDRICH\DABATE



LEGEND

GP-1 ⊕	DESIGNATION AND APPROXIMATE LOCATION OF PROBE CONDUCTED BY NEW ENGLAND BORING CONTRACTORS FOR SUFFOLK CONSTRUCTION ON 2 AND 3 DECEMBER 2021 AND OBSERVED BY HALEY & ALDRICH, INC.
HA21-B1 ⊕	DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING EXPLORATION DRILLED BY GEOLOGIC EARTH EXPLORATION, INC. DURING THE PERIOD 25 OCTOBER TO 2 NOVEMBER 2021 AND OBSERVED BY HALEY & ALDRICH, INC.
TP-1 ⧓	DESIGNATION AND APPROXIMATE LOCATION OF TEST PIT EXCAVATED BY CAVALIERI CONSTRUCTION CO. BETWEEN 17 SEPTEMBER AND 22 OCTOBER 2021 AND OBSERVED BY HALEY & ALDRICH, INC.
22H-1757 ⊕	DESIGNATION AND APPROXIMATE LOCATION OF BOSTON GROUNDWATER TRUST OBSERVATION WELL INSTALLED IN SEPTEMBER 2005 AND MAY 2012
B-1 ●	DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING EXPLORATION DRILLED BY NEW HAMPSHIRE BORING, INC. FOR MCPHAIL ASSOCIATES, INC. IN MAY 2006, DECEMBER 2006 AND JANUARY 2008
B-9 ◒	DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING EXPLORATION DRILLED BY GUILD DRILLING CO., INC. ON 18 AND 19 APRIL 1995 AND OBSERVED BY HALEY & ALDRICH, INC.
(OW)	INDICATES GROUNDWATER OBSERVATION WELL INSTALLED IN COMPLETED BOREHOLE

NOTES

1. BASE PLAN OBTAINED FROM DRAWINGS TITLED "EXISTING CONDITIONS SURVEY 109 BROOKLINE AVENUE", PREPARED BY FELDMAN LAND SURVEYORS AND DATED 1 MARCH 2021 AND "SUBSURFACE UTILITY INVESTIGATION", PREPARED BY BSI ENGINEERING, INC. AND DATED 3 FEBRUARY 2021.
2. APPROXIMATE LIMITS OF PROPOSED SLURRY WALL OBTAINED FROM DRAWING TITLED "S1.1P3 LOWER LEVEL 03 - FOUNDATION PLAN", PREPARED BY LEMESSURIER AND DATED 11 NOVEMBER 2021.
3. ELEVATIONS ARE IN FEET AND REFERENCE THE BOSTON CITY BASE (BCB) DATUM, WHICH IS 5.65 FEET BELOW THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29) AND 6.46 FEET BELOW THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
4. TECHNICAL MONITORING OF THE TEST BORINGS CONDUCTED IN 1995 AND 2021 WAS PERFORMED BY HALEY & ALDRICH, INC.; THE LOCATIONS OF THE EXPLORATIONS IN 2021 WERE ESTIMATED BY TAPING TO EXISTING SITE FEATURES IN THE FIELD AND SHOULD BE CONSIDERED APPROXIMATE.

0 50 100
SCALE IN FEET

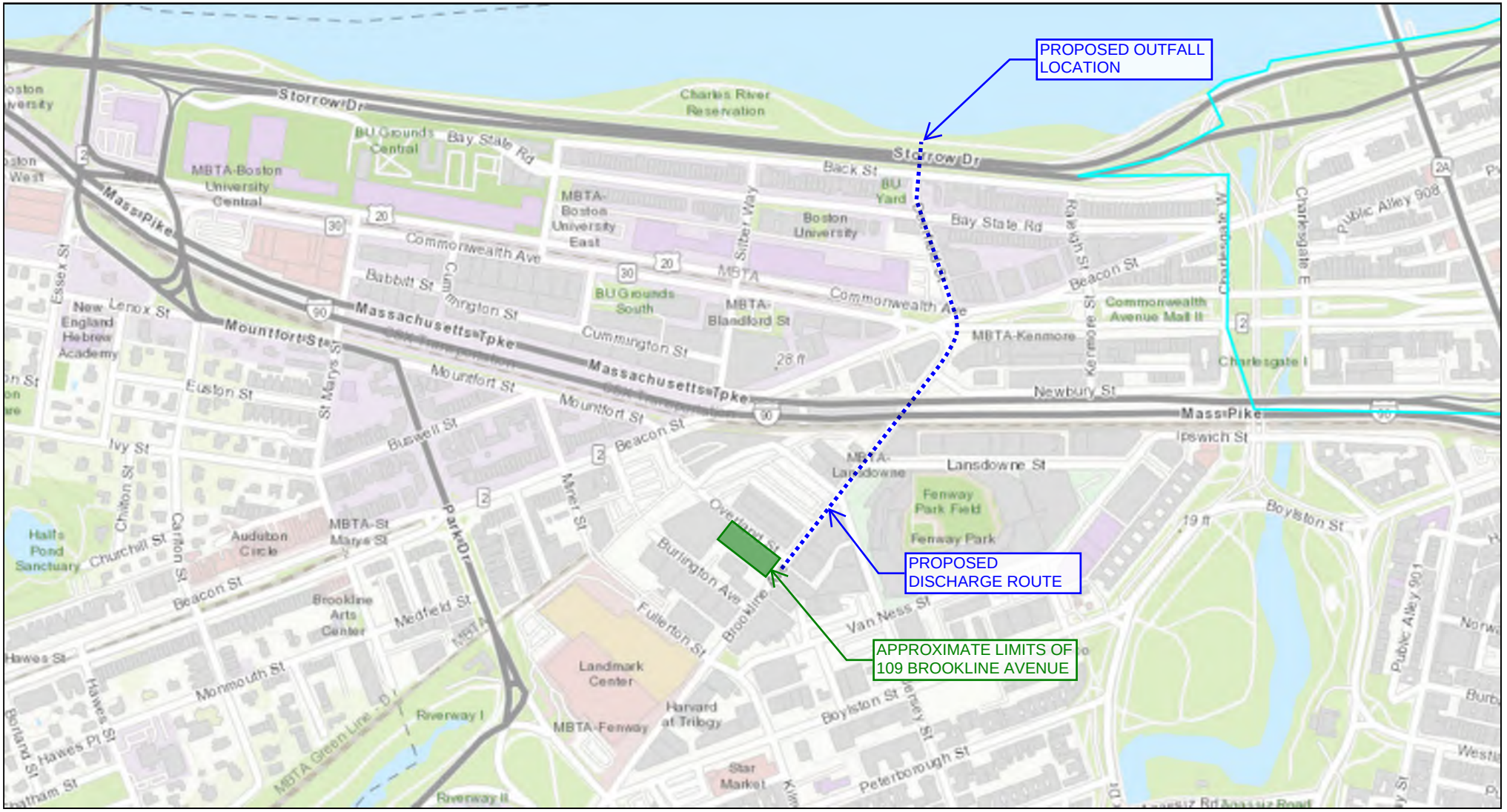
HALEY ALDRICH
109 BROOKLINE AVENUE
BOSTON, MASSACHUSETTS

SITE AND SUBSURFACE
EXPLORATION LOCATION PLAN

SCALE: AS SHOWN
MARCH 2022

FIGURE 2

Saved by: DTE Printed: 1/27/2022 10:48 AM Sheet: B004
J:\GRAPHICS\200676\200676-000-B004.DWG



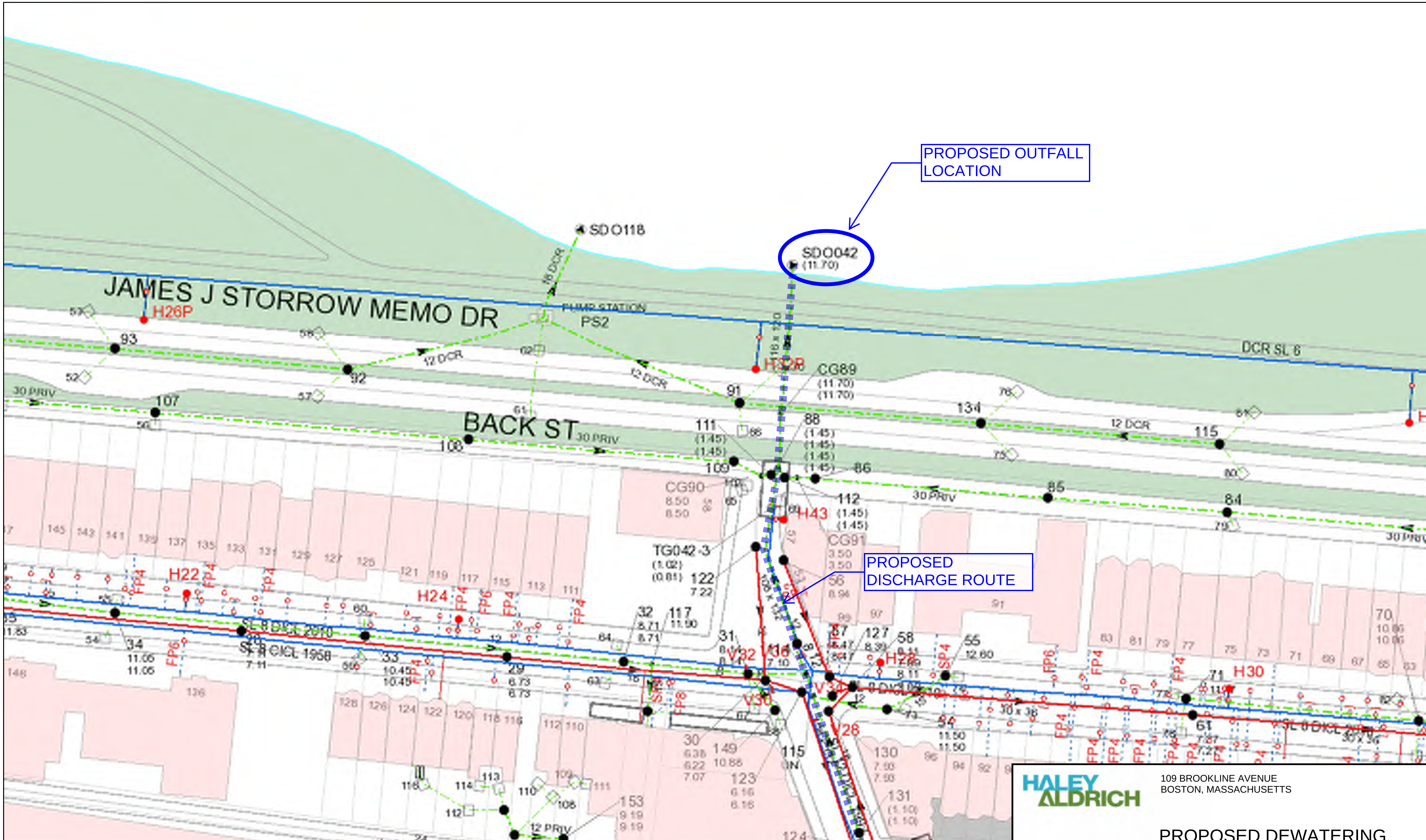
HALEY ALDRICH

109 BROOKLINE AVENUE
BOSTON, MASSACHUSETTS

PROPOSED DEWATERING DISCHARGE ROUTE

SCALE: NONE
MARCH 2022

FIGURE 3A



HALEY ALDRICH

109 BROOKLINE AVENUE
BOSTON, MASSACHUSETTS

PROPOSED DEWATERING DISCHARGE LOCATION

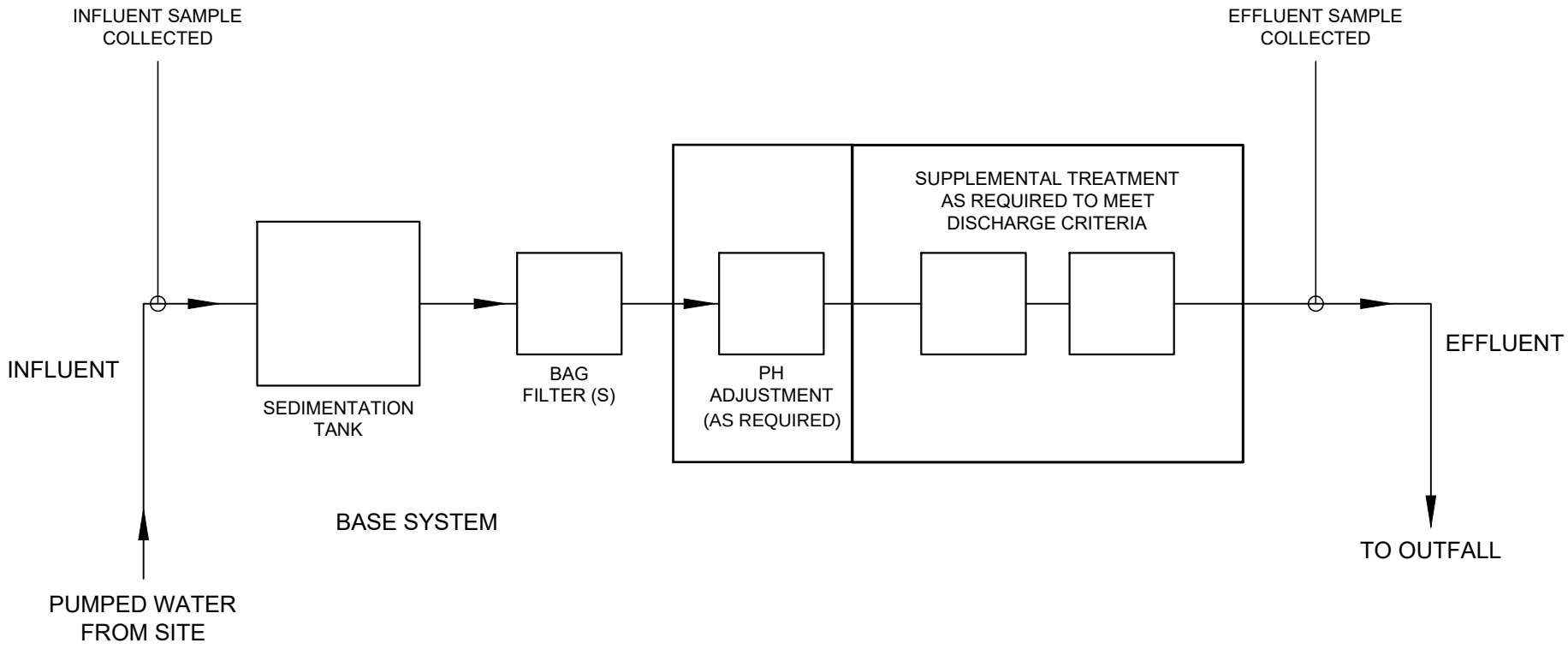
SCALE: AS SHOWN
MARCH 2022

FIGURE 3B

BOSTON WATER AND SEWER

N W E S

0 50 100
Feet



LEGEND

DIRECTION OF FLOW

NOTE

1. DETAILS OF TREATMENT SYSTEM MAY VARY FROM SYSTEM INDICATED ABOVE. SPECIFIC MEANS AND METHODS OF TREATMENT TO BE SELECTED BY CONTRACTOR. WATER WILL BE TREATED TO MEET REQUIRED EFFLUENT STANDARDS.

HALEY ALDRICH

109 BROOKLINE AVENUE
BOSTON, MASSACHUSETTS

PROPOSED TREATMENT SYSTEM SCHEMATIC

SCALE: NONE
MARCH 2022

FIGURE 4

APPENDIX A

Remediation General Permit Notice of Intent

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:
109 Brookline Avenue</td><td colspan="3">Site address: 109 Brookline Avenue
Street:</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02215</td></tr>
<tr><td rowspan="4">2. Site owner
IQHQ-109 Brookline, LLC

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: William Ashton</td></tr>
<tr><td colspan="2">Telephone: 617-314-7951</td><td>Email: washton@iqhqreit.com</td></tr>
<tr><td colspan="3">Mailing address: One Boston Place
Street: 201 Washington Street, Suite 3920</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02108</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
Suffolk Construction Company, Inc.</td><td colspan="3">Contact Person: Joel Perry</td></tr>
<tr><td colspan="2">Telephone: 617-517-5347</td><td>Email: JPerry@suffolk.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: 65 Allerton Street</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02119</td></tr>
<tr><td>4. NPDES permit number assigned by EPA:
N/A

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): 3-37272
☐ NH Groundwater Management Permit or Groundwater Release Detection Permit:
☐ CERCLA
☐ UIC Program
☐ POTW Pretreatment
☐ CWA Section 404</td></tr>
</table>

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
Charles River	MA72-38	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. Lower Charles River on 2016 MA Integrated List of Waters, all uses impaired, TMDLs: 32371 and 33826

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.	15.96 MGD
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.	222.7

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: 3/28/2022

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: Seepage, precipitation, surface water runoff

2. Source water contaminants: No Contaminants Above RCGW-2 or Effluent Limitations; See Table I for Compounds Detected	
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): SDO 042 to Charles River	Outfall location(s): (Latitude, Longitude) 42.35126, 71.09755
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: Storm drain system located adjacent to site, operated by Boston Water and Sewer Commission ☐ A private storm sewer system ■ A municipal storm sewer system If the discharge enters the receiving water via a private or municipal storm sewer system: Has notification been provided to the owner of this system? (check one): ■ Yes ☐ No Has the operator has received permission from the owner to use such system for discharges? (check one): ☐ Yes ■ No, if so, explain, with an estimated timeframe for obtaining permission: BWSC Dewatering Discharge Permit Application Submitted Concurrently with this NOI Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): ☐ Yes ■ No	
Provide the expected start and end dates of discharge(s) (month/year): 7/1/2022 to 7/1/2024 Indicate if the discharge is expected to occur over a duration of: ☐ less than 12 months ■ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

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

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

■ A. Inorganics
*■ B. Non-Halogenated Volatile Organic Compounds
*■ C. Halogenated Volatile Organic Compounds
■ D. Non-Halogenated Semi-Volatile Organic Compounds
*■ E. Halogenated Semi-Volatile Organic Compounds
*■ F. Fuels Parameters</td><td>d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply</td></tr>
<tr><td colspan="3">* COMPOUNDS DETECTED IN SOIL ONLY</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	121,4500	75	2540	2540	Report mg/L	---
Chloride		✓	1	44,300.0	50000	3650000	3650000	Report µg/l	---
Total Residual Chlorine	✓		1	121,4500	40	<40	<40	0.2 mg/L	
Total Suspended Solids		✓	1	121,2540	5000	10000	10000	30 mg/L	---
Antimony	✓		1	3200.8	4	<4	<4	206 µg/L	
Arsenic		✓	1	3200.8	1	1.53	1.53	104 µg/L	
Cadmium	✓		1	3200.8	0.2	<0.2	<0.2	10.2 µg/L	
Chromium III	✓		1	3200.8	10	<10	<10	323 µg/L	
Chromium VI	✓		1	1,7196A	10	<10	<10	323 µg/L	
Copper	✓		1	3200.8	1	<1	<1	242 µg/L	
Iron		✓	1	19,200.7	50	3950	3950	5,000 µg/L	
Lead	✓		1	3200.8	1	<1	<1	160 µg/L	
Mercury	✓		1	3,245.1	0.2	<0.2	<0.2	0.739 µg/L	
Nickel		✓	1	3200.8	2	2.13	2.13	1,450 µg/L	
Selenium	✓		1	3200.8	5	<5	<5	235.8 µg/L	
Silver	✓		1	3200.8	0.4	<0.4	<0.4	35.1 µg/L	
Zinc		✓	1	3200.8	10	16.04	16.04	420 µg/L	
Cyanide	✓		1	121,4500	5	<5	<5	178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX	✓		1	128,624.1	1	<1	<1	100 µg/L	---
Benzene	✓		1	128,624.1	1	<1	<1	5.0 µg/L	---
1,4 Dioxane	✓		1	128,624.1	5	<5	<5	200 µg/L	---
Acetone	✓		1	128,624.1	10	<10	<10	7.97 mg/L	---
Phenol	✓		1	4,420.1	30	<30	<30	1,080 µg/L	

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
C. Halogenated VOCs									
Carbon Tetrachloride	✓		1	128,624.1	1	<1	<1	4.4 µg/L	
1,2 Dichlorobenzene	✓		1	128,624.1	5	<5	<5	600 µg/L	---
1,3 Dichlorobenzene	✓		1	128,624.1	5	<5	<5	320 µg/L	---
1,4 Dichlorobenzene	✓		1	128,624.1	5	<5	<5	5.0 µg/L	---
Total dichlorobenzene	✓		1	128,624.1	5	<5	<5	763 µg/L in NH	---
1,1 Dichloroethane	✓		1	128,624.1	1.5	<1.5	<1.5	70 µg/L	---
1,2 Dichloroethane	✓		1	128,624.1	1.5	<1.5	<1.5	5.0 µg/L	---
1,1 Dichloroethylene	✓		1	128,624.1	1	<1	<1	3.2 µg/L	---
Ethylene Dibromide	✓		1	14,504.1	0.01	<0.01	<0.01	0.05 µg/L	---
Methylene Chloride	✓		1	128,624.1	1	<1	<1	4.6 µg/L	---
1,1,1 Trichloroethane	✓		1	128,624.1	2	<2	<2	200 µg/L	---
1,1,2 Trichloroethane	✓		1	128,624.1	1.5	<1.5	<1.5	5.0 µg/L	---
Trichloroethylene	✓		1	128,624.1	1	<1	<1	5.0 µg/L	---
Tetrachloroethylene	✓		1	128,624.1	1	<1	<1	5.0 µg/L	
cis-1,2 Dichloroethylene	✓		1	128,624.1	1	<1	<1	70 µg/L	---
Vinyl Chloride	✓		1	128,624.1	1	<1	<1	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✓		1	129, 625.1	2.2	<2.2	<2.2	190 µg/L	
Diethylhexyl phthalate	✓		1	129, 625.1	2.2	<2.2	<2.2	101 µg/L	
Total Group I PAHs	✓		1	129, 625.1	0.1	<0.1	<0.1	1.0 µg/L	---
Benzo(a)anthracene	✓		1	129, 625.1	0.1	<0.1	<0.1	As Total PAHs	
Benzo(a)pyrene	✓		1	129, 625.1	0.1	<0.1	<0.1		
Benzo(b)fluoranthene	✓		1	129, 625.1	0.1	<0.1	<0.1		
Benzo(k)fluoranthene	✓		1	129, 625.1	0.1	<0.1	<0.1		
Chrysene	✓		1	129, 625.1	0.1	<0.1	<0.1		
Dibenzo(a,h)anthracene	✓		1	129, 625.1	0.1	<0.1	<0.1		
Indeno(1,2,3-cd)pyrene	✓		1	129, 625.1	0.1	<0.1	<0.1		

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	129, 625.	0.1	0.676	0.676	100 µg/L	---
Naphthalene	✔		1	129, 625.	0.1	<0.1	<0.1	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔		1	127,608.3	0.2	<0.2	<0.2	0.000064 µg/L	---
Pentachlorophenol	✔		1	129,625.1	1	<1	<1	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✔		1	140,1664	4000	<4000	<4000	5.0 mg/L	---
Ethanol	✔		1	600,1617	20000	<20000	<20000	Report mg/L	---
Methyl-tert-Butyl Ether	✔		1	128,624.1	10	<10	<10	70 µg/L	
tert-Butyl Alcohol	✔		1	128,624.1	100	<100	<100	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔		1	128,624.1	20	<20	<20	90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC_{50}, additional pollutants present); if so, specify:									
Hardness		✔	1	19,200.7	660	691000	691000		
pH (SU)		✔	1	FIELD	NA	6.54	6.54		
Temperature (°C)		✔	1	FIELD	NA	18	18		
*See attached table for additional compounds detected in soil									

Compounds Detected in Soil:

A. Inorganics
Arsenic*
Barium
Beryllium
Cadmium
Chromium
Lead
Lead, TCLP
Mercury
Nickel*
Vanadium
Zinc*

B. Non-Halogenated VOCs
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
2-Butanone (Methyl Ethyl Ketone)
2-Phenylbutane (sec-Butylbenzene)
Acetone
Benzene
Carbon disulfide
Cymene (p-Isopropyltoluene)
Ethylbenzene
Isopropylbenzene (Cumene)
Naphthalene
n-Butylbenzene
n-Propylbenzene
tert-Butylbenzene
Tetrahydrofuran
Toluene
Xylene (total)

C. Halogenated VOCs
Chlorobenzene
cis-1,2-Dichloroethene
Trichloroethene
Vinyl chloride

D. Non-Halogenated SVOCs
2,4-Dimethylphenol
2-Methylnaphthalene
3&4-Methylphenol
Acenaphthene*
Acenaphthylene
Anthracene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Benzo(k)fluoranthene
bis(2-Ethylhexyl)phthalate
Chrysene
Dibenz(a,h)anthracene
Dibenzofuran
Fluoranthene
Fluorene*
Indeno(1,2,3-cd)pyrene
Naphthalene
Phenanthrene
Phenol
Pyrene

E. Halogenated SVOCs
PCBs Aroclor-1260

F. Fuels Parameters
Total Petroleum Hydrocarbons
C11-C22 Aromatic Hydrocarbons
C19-C36 Aliphatic Hydrocarbons
C9-C18 Aliphatic Hydrocarbons
C9-C10 Aromatic Hydrocarbons

**Compound also detected in groundwater*

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:
pH adjustment and/or other treatment as required to meet effluent limitations

2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge.
Prior to discharge, collected water is routed through a sedimentation tank and bag filters to remove suspended solids and undissolved chemical constituents, including metals. Total flow will be measured with a flow meter/totalizer. Supplemental treatment may be required to meeting effluent limitations and may include oil/water separators, pH control and/or other components as necessary.

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

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

3. Provide the **design flow capacity** in gallons per minute (gpm) of the most limiting component. Indicate the most limiting component: Bag filters Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	50 GPM
Provide the proposed maximum effluent flow in gpm.	50 GPM
Provide the average effluent flow in gpm.	10 GPM
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	NA

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:
The site contractor has not yet submitted their construction dewatering submittal which will include details of the proposed treatment system along with Safety Data Sheets (SDSs).

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.

Refer to attached Haley & Aldrich, Inc. letter.

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

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

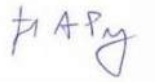
J. Certification requirement

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

BMPP certification statement: A BMPP meeting the requirements of this general permit will be implemented upon initiation of discharge and available for review at the site.	
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: Will Ashton Digitally signed by Will Ashton DN: C=US, E=washton@iqhqreit.com, O=IQHQ, OU=Development, CN=Will Ashton Reason: I agree to the terms defined by the placement of my signature on this document Date: 2022.03.28 13:38:14-04'00'	Date: 3/28/2022
Print Name and Title: William Ashton, Director, Development	

J. Certification requirement

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

BMPP certification statement:	A BMPP meeting the requirements of this general permit will be implemented upon initiation of discharge and available for review at the site.
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: 3/23/22
Print Name and Title: Joel Perry, Project Executive (Suffolk Construction Co., Inc.)	

APPENDIX B

BWSC Dewatering Discharge Permit Application

Haley & Aldrich, Inc.
465 Medford St.
Suite 2200
Boston, MA 02129
617.886.7400

29 March 2022
File No. 0200676-000

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

Attention: Jodi Dobay

Subject: Request for Approval of Temporary Construction Dewatering
109 Brookline Avenue
Boston, Massachusetts

Ladies and Gentlemen:

On behalf of our client, IQHQ-109 Brookline, LLC, this letter submits the Boston Water and Sewer Commission (BWSC) Dewatering Discharge Permit Application in support of the proposed development located at 109 Brookline Avenue in Boston, Massachusetts.

Dewatering is necessary to enable below-grade construction in-the-dry and is anticipated to begin in July 2022 and continue for approximately two years. Prior to discharge, collected water will be routed through at minimum a sedimentation tank and bag filters to remove suspended solids and undissolved constituents, including metals. Other pre-treatment may be conducted as necessary to comply with National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) Effluent Limitations. The proposed dewatering discharge route and BWSC outfall location are shown on Figures 3A and 3B of the submitted NPDES RGP Notice of Intent (NOI), attached for reference and currently under review by the U.S. Environmental Protection Agency (EPA) under the NPDES RGP.

If you have any questions, please feel free to contact the undersigned at 617-886-7400.

Sincerely yours,
HALEY & ALDRICH, INC.

Taylor L. Cairns
Assistant Project Manager

Jennifer L. Sweet, P.E. (MA), LSP
Senior Associate | Program Manager

Attachments:
BWSC Dewatering Discharge Permit Application
Copy of NPDES RGP NOI Application

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

DEWATERING DISCHARGE PERMIT APPLICATION

OWNER / AUTHORIZED APPLICANT PROVIDE INFORMATION HERE:

Company Name: Suffolk Construction Company, Inc. Address: 65 Allerton Street, Boston, MA 02119

Phone Number: (617) 517-5347 Fax number: (617) 602-4388

Contact person name: Joel Perry Title: Project Executive

Cell number: (617) 963-9992 Email address: JPerry@suffolk.com

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

Owner's Information (if different from above):

Owner of property being dewatered: IQHQ-109 Brookline, LLC

Owner's mailing address: 201 Washington Street, Suite 3920, Boston, MA 02108 Phone number: 617-314-7951

Location of Discharge & Proposed Treatment System(s):

Street number and name: 109 Brookline Avenue Neighborhood Fenway/Kenmore

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

Describe Proposed Pre-Treatment System(s): Refer to attached letter prepared by Haley & Aldrich, Inc.

BWSC Outfall No. SDO 042 Receiving Waters Charles River

Temporary Discharges (Provide Anticipated Dates of Discharge): From 07/01/2022 To 07/01/2024

☐ 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: Jodi Dobay, Engineering Customer Service
E-mail: beginj@bwsc.org
Phone: 617-989-7259 Fax: 617-989-7716

Signature of Authorized Representative for Property Owner: Will Ashton Digitally signed by Will Ashton DN: C=US, E=washton@iqhqreit.com, O=IQHQ, OU=Development, CN=Will Ashton Reason: I agree to the terms defined by the placement of my signature on this document Date: 2022.03.23 13:56:50-04'00' Date: 3/23/22

APPENDIX C

Effluent Limitations and Dilution Factor Calculations

Enter number values in green boxes below

Enter values in the units specified

↓

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

Enter a dilution factor, if other than zero

↓

222.7

Enter values in the units specified

↓

691	C_d = Enter influent hardness in **mg/L** $CaCO_3$
52.1	C_s = Enter receiving water hardness in **mg/L** $CaCO_3$

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

↓

7.45	pH in **Standard Units**
8.1	Temperature in **°C**
0.133	Ammonia in **mg/L**
52.1	Hardness in **mg/L** $CaCO_3$
0	Salinity in **ppt**
0	Antimony in **µg/L**
0	Arsenic in **µg/L**
0	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
1.52	Copper in **µg/L**
650	Iron in **µg/L**
1.18	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
11.19	Zinc in **µg/L**

Enter **influent** concentrations in the units specified

↓

0	TRC in **µg/L**
2.54	Ammonia in **mg/L**
0	Antimony in **µg/L**
1.53	Arsenic in **µg/L**
0	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
0	Copper in **µg/L**
3950	Iron in **µg/L**
0	Lead in **µg/L**
0	Mercury in **µg/L**
2.13	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
16.04	Zinc in **µg/L**
0	Cyanide in **µg/L**
0	Phenol in **µg/L**
0	Carbon Tetrachloride in **µg/L**
0	Tetrachloroethylene in **µg/L**
0	Total Phthalates in **µg/L**
0	Diethylhexylphthalate in **µg/L**
0	Benzo(a)anthracene in **µg/L**
0	Benzo(a)pyrene in **µg/L**
0	Benzo(b)fluoranthene in **µg/L**
0	Benzo(k)fluoranthene in **µg/L**
0	Chrysene in **µg/L**
0	Dibenzo(a,h)anthracene in **µg/L**
0	Indeno(1,2,3-cd)pyrene in **µg/L**
0	Methyl-tert butyl ether in **µg/L**

Notes:

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

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

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

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

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

Leave 0 if no entry

Freshwater only

pH, temperature, and ammonia required for all discharges

Hardness required for freshwater

Salinity required for saltwater (estuarine and marine)

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

Enter 0 if non-detect or testing not required

if >1 sample, enter maximum

if >10 samples, may enter 95th percentile

Enter 0 if non-detect or testing not required

Dilution Factor	222.7					
A. Inorganics	TBEL applies if bolded		WQBEL applies if bolded		Compliance Level applies if shown	
Ammonia	**Report**	mg/L	---			
Chloride	**Report**	µg/L	---			
Total Residual Chlorine	**0.2**	mg/L	2449	µg/L	---	µg/L
Total Suspended Solids	**30**	mg/L	---			
Antimony	**206**	µg/L	142507	µg/L		
Arsenic	**104**	µg/L	2227	µg/L		
Cadmium	**10.2**	µg/L	38.6789	µg/L		
Chromium III	**323**	µg/L	11754.9	µg/L		
Chromium VI	**323**	µg/L	2546.1	µg/L		
Copper	**242**	µg/L	908.8	µg/L		
Iron	**5000**	µg/L	78583	µg/L		
Lead	**160**	µg/L	69.16	µg/L		
Mercury	**0.739**	µg/L	201.71	µg/L		
Nickel	**1450**	µg/L	7001.0	µg/L		
Selenium	**235.8**	µg/L	1113.3	µg/L		
Silver	**35.1**	µg/L	301.1	µg/L		
Zinc	**420**	µg/L	13588.1	µg/L		
Cyanide	**178**	mg/L	1157.9	µg/L	---	µg/L
B. Non-Halogenated VOCs						
Total BTEX	**100**	µg/L	---			
Benzene	**5.0**	µg/L	---			
1,4 Dioxane	**200**	µg/L	---			
Acetone	**7970**	µg/L	---			
Phenol	**1,080**	µg/L	66800	µg/L		
C. Halogenated VOCs						
Carbon Tetrachloride	**4.4**	µg/L	356.3	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	734.8	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	489.9	µg/L		
Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---			
Benzo(a)anthracene	**1.0**	µg/L	0.8461	µg/L	---	µg/L
Benzo(a)pyrene	**1.0**	µg/L	0.8461	µg/L	---	µg/L
Benzo(b)fluoranthene	**1.0**	µg/L	0.8461	µg/L	---	µg/L
Benzo(k)fluoranthene	**1.0**	µg/L	0.8461	µg/L	---	µg/L
Chrysene	**1.0**	µg/L	0.8461	µg/L	---	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.8461	µg/L	---	µg/L
Indeno(1,2,3-cd)pyrene	**1.0**	µg/L	0.8461	µg/L	---	µg/L
Total Group II Polycyclic Aromatic Hydrocarbons	**100**	µg/L	---			
Naphthalene	**20**	µg/L	---			
E. Halogenated SVOCs						
Total Polychlorinated Biphenyls	**0.000064**	µg/L	---		0.5	µg/L
Pentachlorophenol	**1.0**	µg/L	---			
F. Fuels Parameters						
Total Petroleum Hydrocarbons	**5.0**	mg/L	---			
Ethanol	**Report**	mg/L	---			
Methyl-tert-Butyl Ether	**70**	µg/L	4453	µg/L		
tert-Butyl Alcohol	**120**	µg/L	---			
tert-Amyl Methyl Ether	**90**	µg/L	---			

HALEY & ALDRICH, INC.		**CALCULATIONS**	FILE NO.	0200676-000	
			SHEET	1 of 1	
CLIENT	IQHQ-109 Brookline, LLC		DATE	16-Mar-22	
PROJECT	109 Brookline Avenue		COMPUTED BY	TLC	
SUBJECT	Dilution Factor Calculations		CHECKED BY	JMT	

PURPOSE: Calculate Dilution Factor (DF) for project based on 7 Day 10 Year (7Q10) Low Flow values.

APPROACH: Calculate DF based on EPA formula $(Q_S + Q_D)/Q_D$, where Q_S is 7Q10 in million gallons per day (MGD) and Q_D is discharge flow in MGD.

ASSUMPTIONS:
1. 7Q10 is 24.7 cfs (from StreamStats)
2. A conversion of 7.48 is used to convert cubic feet to gallons
3. A discharge flow rate of 50 gpm is assumed

CALCULATIONS:

7Q10 Low Flow Value (Q_S)

$$Q_S = \frac{24.7\ ft^3}{sec} \times \frac{7.48\ gallons}{ft^3} \times \frac{86{,}400\ sec}{day} \times \frac{1\ MG}{1{,}000{,}000\ gallons}$$

$Q_S =$ 15.96 MGD

Discharge Flow rate (Q_D)

$$Q_D = \frac{50\ gallons}{min} \times \frac{1{,}440\ min}{day} \times \frac{1\ MG}{1{,}000{,}000\ gallons}$$

$Q_D =$ 0.072 MGD

Dilution Factor (DF)

$$DF = \frac{Q_S + Q_D}{QD} = \frac{15.96\ MGD + 0.072\ MGD}{0.072\ MGD} = 222.7$$

CONCLUSION: The dilution factor for this project is calculated to be 222.7 based on the provided 7Q10 low flow value and discharge flow rate.

Thibault, Jonathan M.

From: Coniaris, Catherine (DEP) <catherine.coniaris@state.ma.us>
Sent: Monday, March 28, 2022 2:02 PM
To: Cairns, Taylor
Cc: Thibault, Jonathan M.; Block, Kyle; Ruan, Xiaodan (DEP)
Subject: Re: 109 Brookline Avenue - 7Q10 and Dilution Factor for NPDES RGP NOI

CAUTION: External Email

No more questions, all set!

PLEASE NOTE CHANGES IN RED
Cathy Coniaris (formerly Vakalopoulos)
Massachusetts Department of Environmental Protection
1 Winter St., Boston, MA 02108, 617-835-6693
Please consider the environment before printing this e-mail

From: Cairns, Taylor <TCairns@haleyaldrich.com>
Sent: Monday, March 28, 2022 3:53 PM
To: Coniaris, Catherine (DEP) <Catherine.Coniaris@mass.gov>
Cc: Thibault, Jonathan M. <JThibault@haleyaldrich.com>; Block, Kyle <KBlock@haleyaldrich.com>; Ruan, Xiaodan (DEP) <xiaodan.ruan@mass.gov>
Subject: RE: 109 Brookline Avenue - 7Q10 and Dilution Factor for NPDES RGP NOI

Hi Cathy,

Yes, 50 gpm is the design flow of the treatment system. Thanks so much and please reach out with any additional questions!

Taylor Cairns
Assistant Project Manager
C | 617.981.3038

HALEY ALDRICH

465 Medford Street | Suite 2200
Boston, Massachusetts 02129

From: Coniaris, Catherine (DEP) <catherine.coniaris@state.ma.us>
Sent: Monday, March 28, 2022 2:20 PM
To: Cairns, Taylor <TCairns@haleyaldrich.com>
Cc: Thibault, Jonathan M. <JThibault@haleyaldrich.com>; Block, Kyle <KBlock@haleyaldrich.com>; Ruan, Xiaodan (DEP)

<xiaodan.ruan@state.ma.us>
Subject: Re: 109 Brookline Avenue - 7Q10 and Dilution Factor for NPDES RGP NOI

CAUTION: External Email

Hi Taylor,
Please confirm that 50 gpm is the design flow of the treatment system. Your calculation sheet only states that 50 gpm is assumed. If this is indeed the design flow then your dilution factor calculation of 222.7 for this proposed discharge from 109 Brookline Avenue Boston via a storm drain to the Charles River is correct.

Here is water quality information to assist you with filling out the NOI:

> Waterbody and ID: Charles River (MA72-38)
> Classification: B(CSO)
> Outstanding Resource Water?: No
> State's most recent Integrated List is located here: https://www.mass.gov/doc/final-massachusetts-integrated-list-of-waters-for-the-clean-water-act-20182020-reporting-cycle/download, search for "MA 72-38" to see the causes of impairments.
> TMDLs: There are two approved TMDLs (pathogens and phosphorus) for this segment.

If this is not a *current* MCP site, then in addition to submitting the NOI to EPA, you need to apply with MassDEP and submit a $500 fee (unless fee exempt, e.g., municipality). For MassDEP's application, please use ePLACE, an online application submittal process where you will set up a user ID and be able to submit NOIs for various projects as well as pay by credit card. The instructions are located on this page: https://www.mass.gov/how-to/wm-15-npdes-general-permit-notice-of-intent. Technical assistant information is available on the front page of the ePLACE application webpage.

Please let me know if you have any questions.

Cathy

PLEASE NOTE CHANGES IN RED
Cathy Coniaris (formerly Vakalopoulos)
Massachusetts Department of Environmental Protection
1 Winter St., Boston, MA 02108, 617-835-6693
Please consider the environment before printing this e-mail

From: Cairns, Taylor <TCairns@haleyaldrich.com>
Sent: Friday, March 18, 2022 1:21 PM
To: Coniaris, Catherine (DEP) <Catherine.Coniaris@mass.gov>
Cc: Thibault, Jonathan M. <JThibault@haleyaldrich.com>; Block, Kyle <KBlock@haleyaldrich.com>
Subject: 109 Brookline Avenue - 7Q10 and Dilution Factor for NPDES RGP NOI

Hi Cathy,

As required in Appendix V of the 2017 NPDES RGP, I have attached to this email our StreamStats report detailing the 7 D ay 10 Year (7Q10) low flow value for our project (listed below) along with the dilution factor calculations for your review and confirmation.

Project:
109 Brookline Avenue
Boston, Massachusetts

Discharge:
Charles River via stormwater system outfall SDO 042. See attached discharge route.
Design System Flow: 50 gallons per minute (0.072 MGD)
7 Day 10 Year Low Flow value (from attached StreamStats Report) = 24.7 cfs (15.96 MGD)

Dilution Factor (from attached calculations) = 222.7

Can you please confirm if these values are appropriate for use for our project?

Thank you!

Taylor Cairns
Assistant Project Manager
C | 617.981.3038

HALEY ALDRICH

465 Medford Street | Suite 2200
Boston, Massachusetts 02129

StreamStats Report

Region ID: MA
Workspace ID: MA20220114184007507000
Clicked Point (Latitude, Longitude): 42.35320, -71.09742
Time: 2022-01-14 13:40:28 -0500

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	283	square miles
BSLDEM250	Mean basin slope computed from 1:250K DEM	2.327	percent
DRFTPERSTR	Area of stratified drift per unit of stream length	0.23	square mile per mile
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless
ELEV	Mean Basin Elevation	200	feet
LC06STOR	Percentage of water bodies and wetlands determined from the NLCD 2006	13.12	percent

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	283	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	2.327	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	0.23	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1

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

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

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	49.6	ft^3/s
7 Day 10 Year Low Flow	24.7	ft^3/s

Low-Flow Statistics Citations

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

functionality of the software and related material nor shall the fact of release constitute any such warranty. Furthermore, the software is released on condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from its authorized or unauthorized use.

USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.6.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

APPENDIX D

Endangered Species Act Documentation

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: March 18, 2022
Project Code: 2022-0021575
Project Name: 109 Brookline Ave

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

To Whom It May Concern:

Please review this letter each time you request an Official Species List, we will continue to update it with additional information and links to websites may change.

About Official Species Lists

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. Federal and non-Federal project proponents have responsibilities under the Act to consider effects on listed species.

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 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. 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 by returning to an existing project's page in IPaC.

Endangered Species Act Project Review

Please visit the "**New England Field Office Endangered Species Project Review and Consultation**" website for step-by-step instructions on how to consider effects on listed

species and prepare and submit a project review package if necessary:

https://www.fws.gov/newengland/endangeredspecies/project-review/index.html

NOTE Please do not use the **Consultation Package Builder** tool in IPaC except in specific situations following coordination with our office. Please follow the project review guidance on our website instead and reference your **Project Code** in all correspondence.

Additional Info About Section 7 of the Act
Under section 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether projects may affect threatened and endangered species and/or designated critical habitat. If a Federal agency, or its non-Federal representative, determines 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 Federal agency also may need to consider proposed species and proposed critical habitat in the consultation. 50 CFR 402.14(c)(1) specifies the information required for consultation under the Act regardless of the format of the evaluation. 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

In addition to consultation requirements under Section 7(a)(2) of the ESA, please note that under sections 7(a)(1) 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. Please contact NEFO if you would like more information.

Candidate species that appear on the enclosed species list have no current protections under the ESA. The species' occurrence on an official species list does not convey a requirement to consider impacts to this species as you would a proposed, threatened, or endangered species. The ESA does not provide for interagency consultations on candidate species under section 7, however, the Service recommends that all project proponents incorporate measures into projects to benefit candidate species and their habitats wherever possible.

Migratory Birds

In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see:

https://www.fws.gov/birds/policies-and-regulations.php

Please feel free to contact us at **newengland@fws.gov** with your **Project Code** in the subject line if you need more information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat.

Attachment(s): Official Species List

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

Project Code: 2022-0021575
Event Code: None
Project Name: 109 Brookline Ave
Project Type: Mixed-Use Construction
Project Description: 109 Brookline Ave
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.346149249999996,-71.10035110887058,14z

Counties: Suffolk County, Massachusetts

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.

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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.

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

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

IPaC User Contact Information

Agency: Haley & Aldrich
Name: Taylor Cairns
Address: 465 Medford Street, Suite 2200
City: Boston
State: MA
Zip: 02129
Email taylc3692@gmail.com
Phone: 6179813038

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Suffolk County, Massachusetts

Local office

New England Ecological Services Field Office

(603) 223-2541
(603) 223-0104

70 Commercial Street, Suite 300
Concord, NH 03301-5094

http://www.fws.gov/newengland

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. 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.

The following species are potentially affected by activities in this location:

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird

species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31
Black-billed Cuckoo Coccyzus erythropthalmus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Blue-winged Warbler Vermivora pinus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 1 to Jun 30
Bobolink Dolichonyx oryzivorus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler Cardellina canadensis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10

Cerulean Warbler Dendroica cerulea This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 29 to Jul 20
Kentucky Warbler Oporornis formosus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Lesser Yellowlegs Tringa flavipes This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Prairie Warbler Dendroica discolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Prothonotary Warbler Protonotaria citrea This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker Melanerpes erythrocephalus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird Euphagus carolinus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

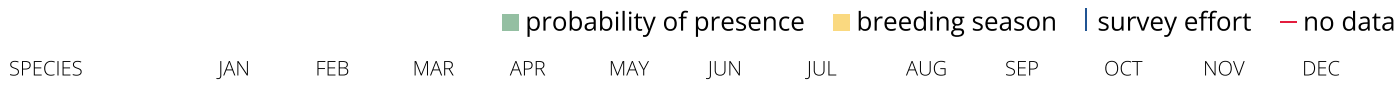
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

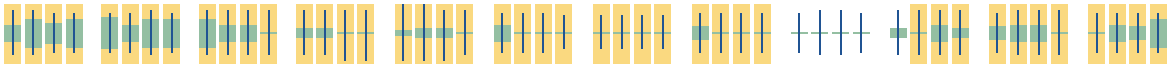
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

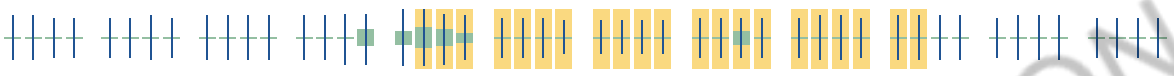
Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Bald Eagle
Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)

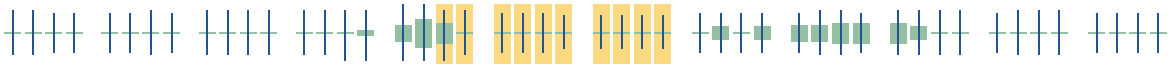


Black-billed Cuckoo
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

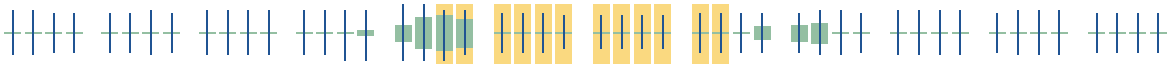


Blue-winged Warbler
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

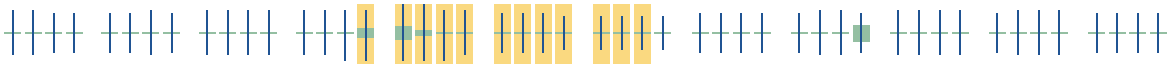
Bobolink
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



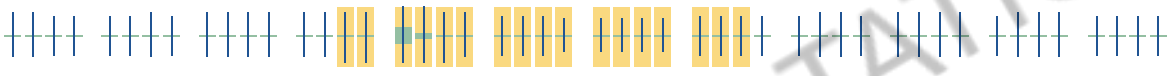
Canada Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Cerulean Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

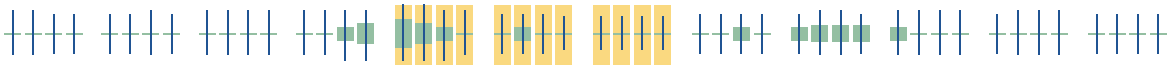


Kentucky Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Lesser Yellowlegs BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Prairie Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in

activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

MassDEP - Bureau of Waste Site Cleanup

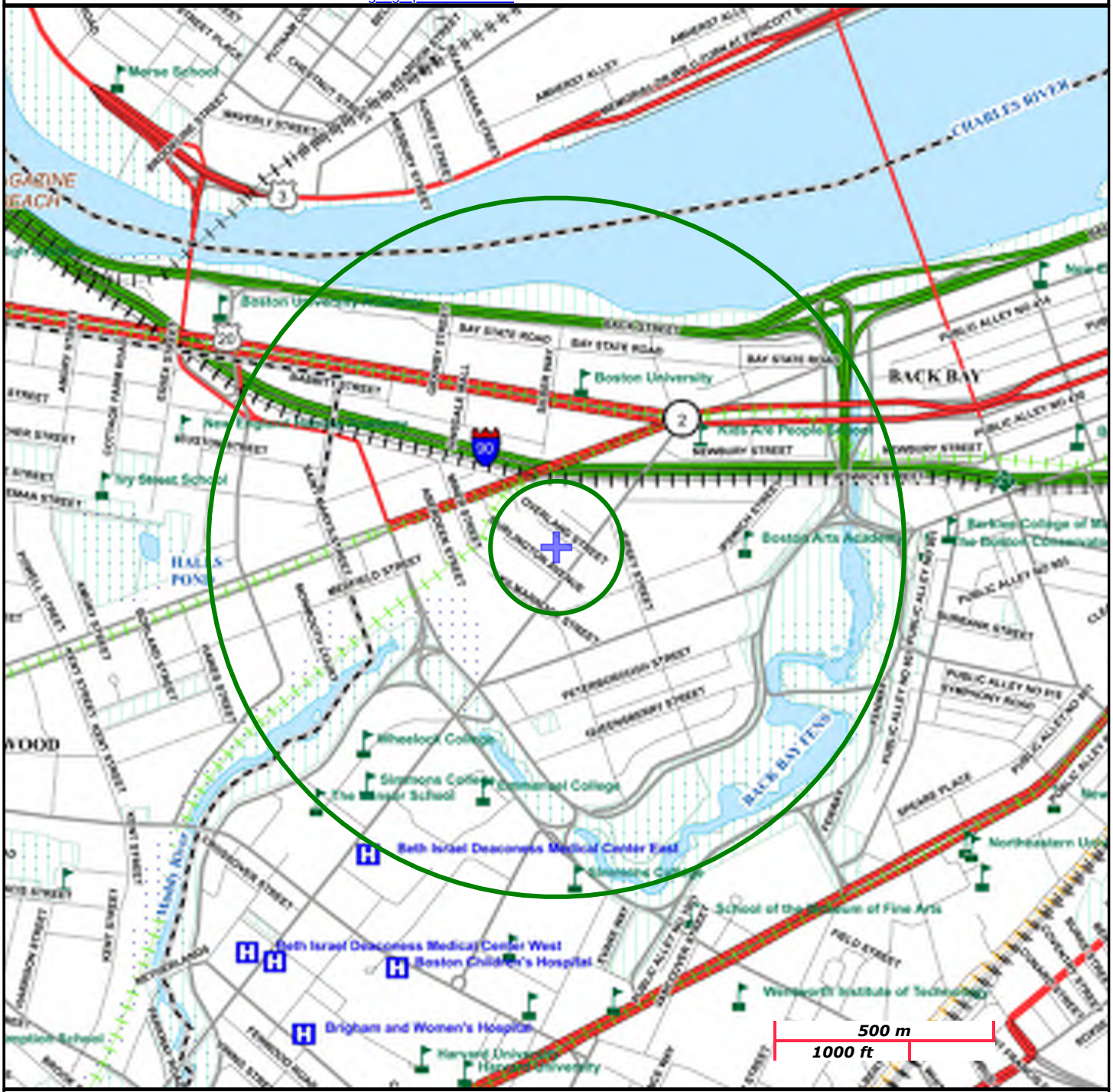
Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

Site Information:
109 BROOKLINE AVE
109 BROOKLINE AVENUE BOSTON, MA

NAD83 UTM Meters:
4690351mN , 326992mE (Zone: 19)
January 12, 2022

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

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



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

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

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

Aquifers: Medium Yield, High Yield, EPA Sole Source

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

PWS Protection Areas: Zone II, IWPA, Zone A

Hydrography: Open Water, PWS Reservoir, Tidal Flat

Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

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

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

APPENDIX E

National Register of Historic Places and
Massachusetts Historical Commission Documentation

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

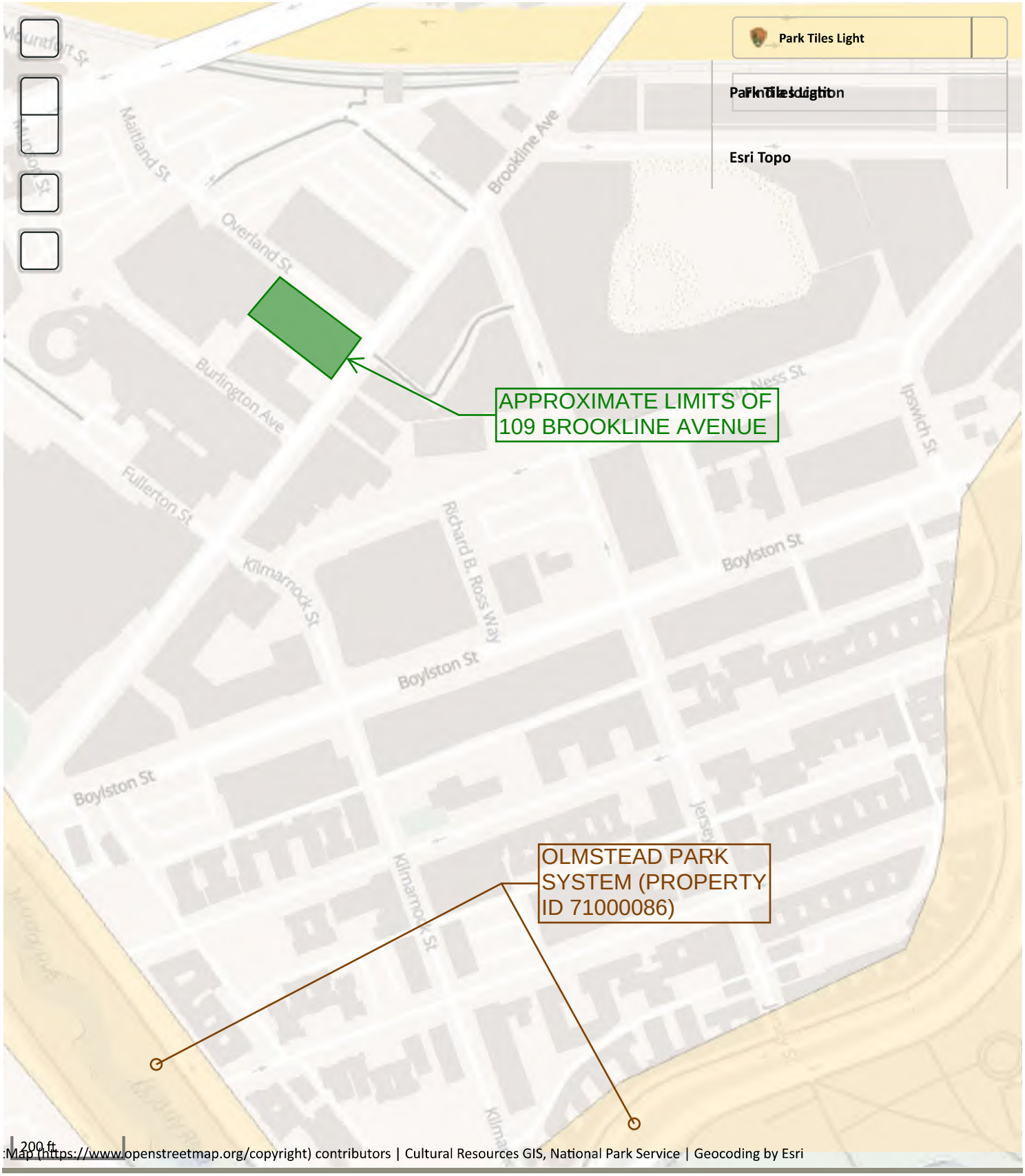
Search Criteria: Town(s): Boston; Place: Fenway - Kenmore; Street No: 109; Street Name: Brookline Ave; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year

National Register of Histori...

National Park Service
U.S. Department of the Interior

Public, non-restricted data depicting National Register spatial data proce...



Form 10-300
(July 1969)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY – NOMINATION FORM

(Type all entries – complete applicable sections)

STATE: Massachusetts
COUNTY: Norfolk-Suffolk
FOR NPS USE ONLY
ENTRY NUMBER | DATE

SEE INSTRUCTIONS

1. NAME

COMMON: Olmsted Park System — Cong. Dists: 8+9
AND/OR HISTORIC:

2. LOCATION see separate sheet

STREET AND NUMBER: Back Bay Fens, Muddy River, Olmsted(Leverett) Park, Jamaica Park, Arborway, Franklin Park
CITY OR TOWN: Boston-Brookline
STATE: Massachusetts | CODE: 25 | COUNTY: Norfolk-Suffolk | CODE: 21-25

3. CLASSIFICATION

CATEGORY (Check One)	OWNERSHIP		STATUS	ACCESSIBLE TO THE PUBLIC
☒ District ☐ Building	☒ Public	Public Acquisition:	☒ Occupied	Yes:
☐ Site ☐ Structure	☐ Private	☐ In Process	☐ Unoccupied	☐ Restricted
☐ Object	☐ Both	☐ Being Considered	☐ Preservation work in progress	☒ Unrestricted
				☐ No

PRESENT USE (Check One or More as Appropriate)

☐ Agricultural	☐ Government	☒ Park	☒ Transportation	☐ Comments
☐ Commercial	☐ Industrial	☐ Private Residence	☐ Other (Specify)	
☐ Educational	☐ Military	☐ Religious		
☐ Entertainment	☐ Museum	☐ Scientific		

4. OWNER OF PROPERTY

OWNER'S NAME: City of Boston, Town of Brookline
STREET AND NUMBER: City Hall Town Hall
CITY OR TOWN: Boston Brookline | STATE: Norfolk-Suffolk | CODE: 21-25

5. LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC: Suffolk Registry of Deeds Norfolk Registry of Deeds
STREET AND NUMBER: Suffolk Couty Courthouse Norfolk County Courthouse
CITY OR TOWN: Boston Dedham | STATE: Mass. | CODE: 25

6. REPRESENTATION IN EXISTING SURVEYS

TITLE OF SURVEY: Inventory of the historic assets of the Commonwealth
DATE OF SURVEY: 1971 ☐ Federal ☒ State ☐ County ☐ Local
DEPOSITORY FOR SURVEY RECORDS: Massachusetts Historical Commission
STREET AND NUMBER: Office of the Secretary, State House
CITY OR TOWN: Boston, | STATE: Mass. | CODE: 025

STATE: Mass.
COUNTY: Norfolk Suffolk
FOR NPS USE ONLY
ENTRY NUMBER
DATE

7. DESCRIPTION

CONDITION	(Check One)					
	☐ Excellent	☒ Good	☐ Fair	☐ Deteriorated	☐ Ruins	☐ Unexposed
	(Check One)			(Check One)		
	☒ Altered (addition)	☐ Unaltered		☐ Moved	☒ Original Site	

DESCRIBE THE PRESENT AND ORIGINAL (if known) PHYSICAL APPEARANCE

The Olmsted Park System includes a series of parks linked by continuous parkways. It curves south from the mouth of the Muddy River to Franklin Park. When originally conceived, the System also included Boston's existing parks, the Common and the Public Garden which were linked to the Olmsted Plan by the Commonwealth Avenue mall.

One of the most heavily used portions of the System is that which comprises the Fens. Olmsted's plan eliminated the original tidal swamp with its dangers of pollution and flooding, and created an informal park. In the section of the Fens north of Boylston Street, although the boundaries remain the same, an overpass access to and from Storrow Drive has mutilated the original landscape design. However, the formal modern design and the plantings are spectacular, and the material used to face the overpass structures is compatible with Richardson's Boylston Street bridge, which was built between 1880-84. Other alterations to the Fens area have been restricted to changes in park land use and have not affected the boundaries and road patterns proposed by Olmsted in 1879. Much of the original swamp has been filled in, although the swamplike vegetation originally used by Olmsted remains along a short portion of the River. Except for a low stadium which desecrates the original design at the junction of the Fenway and Park Drive, most of the remainder of the park presently consists of grass, shade trees and gardens. West of the Muddy River are formal rose garden and small neat gardens tended by nearby residents of the area. These plots began as "Victory Gardens" during World War II and today serve as vivid reminders of that historic preiod. The most important original structures in this area are Richardson's Boylston Street bridge and the Agassiz Bridge, built in 1887-88.

A linear park, though which the Muddy River flows, links the Fens with Jamaica Pond. Various names have been given to this area, the most common of which are "The Riverway", which extends from the Fens to Route 9, and "Leverett (or Olmsted) Park". In these areas the River was an eyesore and a cause of sanitation problems. To remedy these, Olmsted created a plan for the sanitary improvement of the River and to connect the Fens with Jamaica Park in 1881. The result is a greenscape which curves sinuously following the natural contours of the River valley. At the southern end of this portion of the System, the River ends in a series of fresh water ponds, the largest of which is called Leverett. With the exception of a large parking lot near Brookline Avenue, some poorly designed recreational facilities near the Ponds, and a large overpass at Route 9, this section of the System remains most of its original design. The original structures date from the early to mid-1890's and were designed by Shepley, Rutan and Coolidge. These include 3 vehicular bridges, 2 footbridges, and a stone shelter on the Riverway.

Jamaica Park was designed in 1892, but only in 1894 was construction on it begun. Jamaica Pond, the only fresh water body of any size within the city limits, and one of the important features of the entire Park System, occupies a major portion of the Park. In his designs, Olmsted bordered the Pond with paths and shade trees. He encircled it with parkways by utilizing the existing parkway on the eastern side (Jamaicaway) and adding roads on the western side. He incorporated the Perkins Mansion ("Pine Bank" House), situated at the northern end of the Pond, in his plans. This structure, the third to stand on the site, was built in 1870 in the Ruskinian Gothic style. After a fire, the City Architect Wheelwright remodelled the interior, roof, chimneys and garden terrace in 1896. The Boston Parks Department uses the house as headquarters for its recreational division. The stone steps, which lead from the house to the Pond, were taken from the John Hancock House. The Park and road patterns

SEE INSTRUCTIONS

7. DESCRIPTION

remain intact, and the Pond is still used for its original purpose of boating and fishing. In 1906, Daniel Chester French carved the Francis Parkman Memorial which stands on a sloping lawn at the western side of the Park.

At the same time that Jamaica Park was being developed, the Parkway (Arborway) was continued frmm it along the edge of the Arnold Arboretum[2] to Franklin Park. An overpass and new road patterns have obliterated the short portion from the east end of the Arboretum to Franklin Park. Despite the addition of two traffic rotaries, the rest of the Parkway retains not only Olmsted's street design, but a great many of the original trees which have now grown to an impressive height completely shading the Abborway.

Franklin Park, the terminus of the System, is unquestionably one of Olmsted's masterpieces. In 1885, Olmsted designed this large rural park especially for the class people. The largest area of the property, "The Country Park"was reserved exclusively "to provide opportunity for a form of recreation to be obtained only through the influence of pleasing natural scenery upon the sensibilities of those quietly contemplating it."[1] "The Country Park" has been used as a golf course since the late nineties. Although this was not the use which Olmsted intended, it has ensured preservation and a standard of maintenance for at least this part of the Park. Other areas were set aside for sports (the Playstead, on which has been built White Stadium), a deer park, now part of the Zoo, and a playground for small children. The only formal part of the Park is a grand mall, called "The Greeting", designed for use as a promenade and meeting place. The Greeting was never completely planted as planned and has been incorporated into part of the Zoo. Two monuments that Daniel Chester French designed in 1882 for the Boston Post Office are now located at the northern entrance to the Greeting. These groups represent "Labor, Art and the Family" and "Science Controlling the Forces of Steam and Electricity."

The Park is still used for horseback riding and Olmsted's road pattern is intact. Much of the fine original stonework remains, although in bad condition. These structures include the Playstead Overlook (1885-88) and the terraces and arbors on Schoolmaster's Hill (1890-91), both of which appear on Olmsted's 1885 plan, the Valley Gate (1888-89 by Walker and Best) and several rustic fountains. A State hospital, the Shattuck, has been erected on what was formerly the Heathfield on Morton Street.

1 Fabos, Julius G.Y., Milde, Gordon T., and Weinmayr, V. Michael, Frederick Law Olmsted, Sr., 1968, University of Massachusetts Press.

2.NOTE: Since the Arnold Arboretum has already been declared a National Historic Landmark, it is not included in this nomination.

8. SIGNIFICANCE

PERIOD (Check One or More as Appropriate)

☐ Pre-Columbian	☐ 16th Century	☐ 18th Century	☒ 20th Century
☐ 15th Century	☐ 17th Century	☒ 19th Century	

SPECIFIC DATE(S) (If Applicable and Known) 1879, 1881, 1885, 1892

AREAS OF SIGNIFICANCE (Check One or More as Appropriate)

Aboriginal	☐ Education	☐ Political	☒ Urban Planning
☐ Prehistoric	☐ Engineering	☐ Religion/Philosophy	☒ Other (Specify)
☐ Historic	☐ Industry	☐ Science	Recreation
☐ Agriculture	☐ Invention	☐ Sculpture	
☐ Architecture	☒ Landscape Architecture	☐ Social/Humanitarian	
☐ Art	☐ Literature	☐ Theater	
☐ Commerce	☐ Military	☐ Transportation	
☐ Communications	☐ Music		
☐ Conservation			

STATEMENT OF SIGNIFICANCE

The comprehensive parksystem which Frederick Law Olmsted Sr. planned for the City of Boston in the late 1870's is one of the nation's outstanding examples of a multi-use open space and the landscape architect's finest design project in New England. Olmsted's work on the system, which became known as the "Emerald Neck around Boston," created a storng precedent for it included all the design and planning elements which later landscape architects have applied to regional planning on a large scale.

Olmsted's original plans for the park system had three purposes: to creat needed municipal open space while solving an engineering problem; to link ne annexed parts of the city with its historic center; to provide - as in his earlier designs for Central Park (1857-63) - a variety of forms of recreatio Olmsted established a hierarchy of uses for areas within the system, creating large- and medium-size parks for rural relaxation and picknicking, smaller landscaped areas with ponds for recreation and linear parkland for pleasure driving, riding and hiking. Though they were never carried out completely, sketches of circulation patterns suggest that Olmsted intended to separate traffic within the park system according to volume and type, again like his plans for Central Park.

The Bay Bay Fens and the Fenway were the first portions of the park syste to be planned. Into the 1870's the Fens were a tidal swamp which served as a repository for sewage and were subject to violent floods. The three-man Boston Park Commission was created in 1875 primarily to find a solution to this problem. Following an unsuccessful competition for a design, Olmsted was asked to prepare a new plan for the Fens. Using swamp-like vegetation able to withstand periodic soakings with salt water, he created an informal park which was a unique feat of engineering skill and naturalistic landscapi

Franklin Park, the terminus of thesystem, is one of Olmsted's masterpieces This large rural park, included in the earliest schemes for Boston's park system, was financed in part by a bequest made to the city by Benjamin Frankl Olmsted's plan for the Franklin Park area was completed and work begun in 18 Though the surrounding area was still rural, Olmsted anticipated the growth of the city in this direction and designed the Park as a retreat for working class people whose access to open space would be limited without it. In his concern for the social and humanitarian aspects of park design, Olmsted was influenced by the work of Joseph Paxton, whose "People's Park" at Birkenhead (England) he had first visited in 1850. Olmsted's plan for Franklin Park is a more elaborate and highly articulated version of Paxton's Brikenhead design.

SEE INSTRUCTIONS

9. MAJOR BIBLIOGRAPHICAL REFERENCES

Board of Commissioners of the Department of Parks, Boston, Mass., Annual Reports and Special Reports, 1876-1900.

Olmsted, Frederick Law, "Notes on the Plan of Franklin Park and Related Matters", Eleventh Annual Report, Boston Park Department, Boston, 1886.

Fabos, Julius GY., Milde, Gordon T., & Weinmayr, V. Michael, Frederick Law Olmsted, Sr. Massachusetts, University of Massachusetts Press. 1968.

10. GEOGRAPHICAL DATA see separate sheet

BACK BAY FENS

LATITUDE AND LONGITUDE COORDINATES DEFINING A RECTANGLE LOCATING THE PROPERTY						OR	LATITUDE AND LONGITUDE COORDINATES DEFINING THE CENTER POINT OF A PROPERTY OF LESS THAN TEN ACRES					
CORNER	LATITUDE			LONGITUDE				LATITUDE			LONGITUDE	
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds		Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
NW	42	21	07	71	06	03		°	'	"	°	'	"
NE	42	21	07	71	05	27							
SE	42	20	19	71	05	27							
SW	42	20	19	71	06	03							

APPROXIMATE ACREAGE OF NOMINATED PROPERTY: estimated 843

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE:	CODE	COUNTY	CODE
Mass.	25	Norfolk	21
Mass.	25	Suffolk	25

11. FORM PREPARED BY

NAME AND TITLE: Anne R. Wardwell, Survey Director

ORGANIZATION: Massachusetts Historical Commission — DATE: 7/1/71

STREET AND NUMBER: Office of the Secretary, State House

CITY OR TOWN: Boston — STATE: Mass. — CODE: 25

12. STATE LIAISON OFFICER CERTIFICATION

As the designated State Liaison Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service. The recommended level of significance of this nomination is:

National ☒ State ☐ Local ☐

Name _____

Secretary of the Commonwealth, Chairman, Mass. Historical Commission

Title _____

Date 7/2/71

NATIONAL REGISTER VERIFICATION

I hereby certify that this property is included in the National Register.

_____

Chief, Office of Archeology and Historic Preservation

Date _____

ATTEST:

_____

Keeper of The National Register

Date _____

SEE INSTRUCTIONS

Form 10-300a
(July 1969)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY - NOMINATION FORM

(Continuation Sheet)

STATE	
Mass.	
COUNTY	
Norfolk-Suffolk	
FOR NPS USE ONLY	
ENTRY NUMBER	DATE

(Number all entries) BOSTON: OLMSTED PARK SYSTEM

2. Location, cont. - Note: The description below should not be considered a legal description.

Beginning at the intersection of Morton Street and Forest Hills Street; Thence turning and running westerly and northwesterly by the center line of Morton St. and the Arborway; Thence turning and running northwesterly and northerly by the southerly, southwesterly and westerly line of the Arborway to a point at the intersection of the Arborway and Centre St; Thence turning and running northerly and northeasterly by the westerly and northwesterly line of the Arborway to the intersection of the Arborway and Prince St; Thence turning and running generally northwesterly by the center line of Prince St. to a point at the intersection of Perkins St.; Thence turning and running northeasterly and northerly by the northwesterly and northerly line of Perkins St. to a point at the intersection of Perkins St. and Pond Avenue; Thence turning and running northerly, northeasterly, easterly and northerly by the westerly, northwesterly, westerly and northwesterly line of Pond Avenue and Boylston Street; Thence turning and running westerly by the center line of Boylston Street to the intersection of Boylston St. and River Road; Thence turning and running northerly, northeasterly and northerly again by the center line of River Rd. to a point at the intersection of River Rd. and Brookline Avenue; Thence turning and running northeasterly by the center line of Brookline Avenue to a point at the intersection of Brookline Avenue and Parkway Road; Thence turning and running northwesterly along the center line of Parkway Rd. to the intersection of Netherlands Rd.; Thence turning and running northwesterly in a straight line to the southeastern boundary of the Massachusetts Bay Transit Authority line; Thence turning and running northwesterly by the center line of said Massachusetts Bay Transit Authority line to the intersection of said line and Park Drive; Thence turning and running southeasterly, easterly, northeasterly and northerly by the northeasterly, northerly, northwesterly and westerly line of Park Drive to the intersection of Park Drive and Boylston St; Thence turning and running northeasterly, northerly by the northwesterly line of Boylston St. and easterly line of private property to a point at the northwest side of Ipswich St. and the southerly line of Interstate Route 90; Thence turning and running easterly by the southerly line of Interstate Route 90 to a point at the northeast corner of Ipswich St. at the intersection of Charlesgate East; Thence turning and running southwesterly by the southeasterly line of Charlesgate East to the intersection of Boylston St. and the Fenway; Thence turning and running southerly, southwesterly, westerly and northwesterly by the easterly, southeasterly, southerly and southwesterly line of theFenway to the intersection of the Fenway and Brookline Avenue; Thence turning and running northwesterly, westerly, southwesterly, southerly, southeasterly, southerly and southwesterly by the southwesterly, southerly, southeasterly easterly, northeasterly, easterly and southeasterly line of the Riverway to the intersection of the Riverway and Huntington Avenue; Thence turning and running generally southerly, southwesterly, southerly, southeasterly, southerly, southerly and easterly by the easterly, southeasterly, easterly, northeasterly, easterly, northeasterly and northerly lines of Jamaicaway, Pond St. and the Arborway to the intersection of the Arborway and Forest Hills Street; Thence turning and running northeasterly and northerly by the center line of Forest Hills Street to the intersection of Forest Hills Street and Glen Road; Thence turning and

Form 10-300a
(July 1969)

ED STATES DEPARTMENT OF THE INTERIO
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY - NOMINATION FORM

(Continuation Sheet)

STATE	Mass.	
COUNTY	Norfolk-Suffolk	
FOR NPS USE ONLY		
ENTRY NUMBER		DATE

(Number all entries)

BOSTON: OMSTED PARK SYSTEM, CONT.

2 LOCATION, CONT.

running southeasterly by the center line of Glen Road to the intersection of Glen Rd. and Sigourney St.; Thence turning and running northeasterly by the center line of Sigourney St. to the intersection of Sigourney St. and Peter Barley Rd.; Thence turning and running nottherly and northeasterly by the center line of Walnut Avenue to the intersection of Walnut Avenue and Seaver St.; Thence turning and running southeasterly by the center line of Seaver St. to the intersection of Seaver St. and Blue Hill Avenue; Thence turning and running southeasterly by the center line of Blue Hill Avenue to the intersection of Blue Hill Avenue and American Legion Highway; Thence turning and running southwesterly by the center line of American Legion Highway to the intersection of American Legion Highway and Canterbury St.; Thence turning and running westerly by the center line of Canterbury St. to the intersection of Canterbury St. and Morton Street; Thence turning and running northwesterly and westerly by the center line of Morton St. to the intersection of Forest Hills Street and Morton Street.

Northern section of the Fens
Beginning at the northwest roner of Back Street at its intersection with Charlesgate West; Thence turning and running northeasterly to the northeast corner of Back St. at its intersection with Charlesgate East; Thence turning and running southerly by the easterly line of Charlesgate East to the northern boundary of Interstate Route 90; Thence turning and running westerly by the northerly line of Interstate Route 90; Thence turning and running northerly by the westerly line of Charlesgate West to the point of beginning.

10. Geographical Data

Muddy River/Jamaica Park

NW	Lat 42°20'47"	Long. 71°06'27"	
NE	42 20 35	71 05 57	
SE	42 18 43½	71 07 11	
SW	42 18 57½	71 07 43	(Newton Quad)

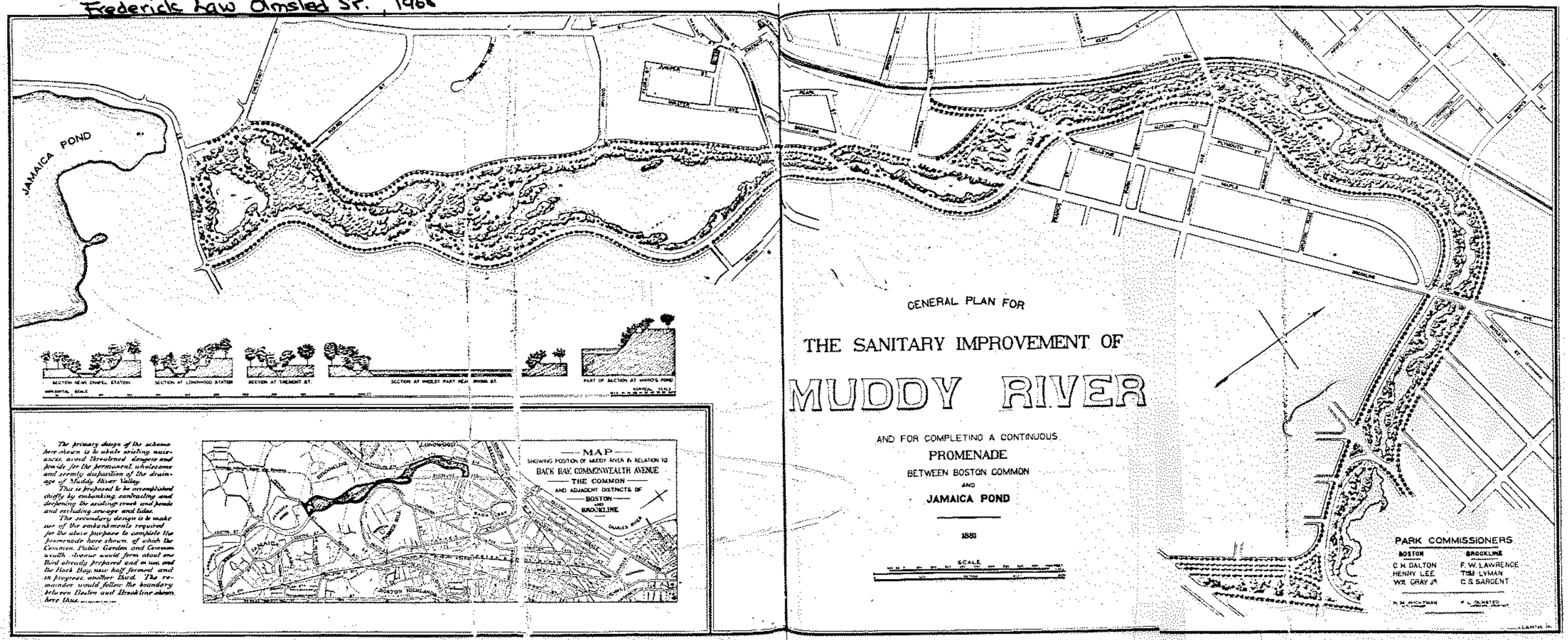
Arborway

NW	42 18 35½	71 07 41	(Newton Quad)
NE	42 18 49	71 07 22	
SE	42 18 02½	71 06 23	
SW	42 17 48½	71 06 42	

Franklin Park

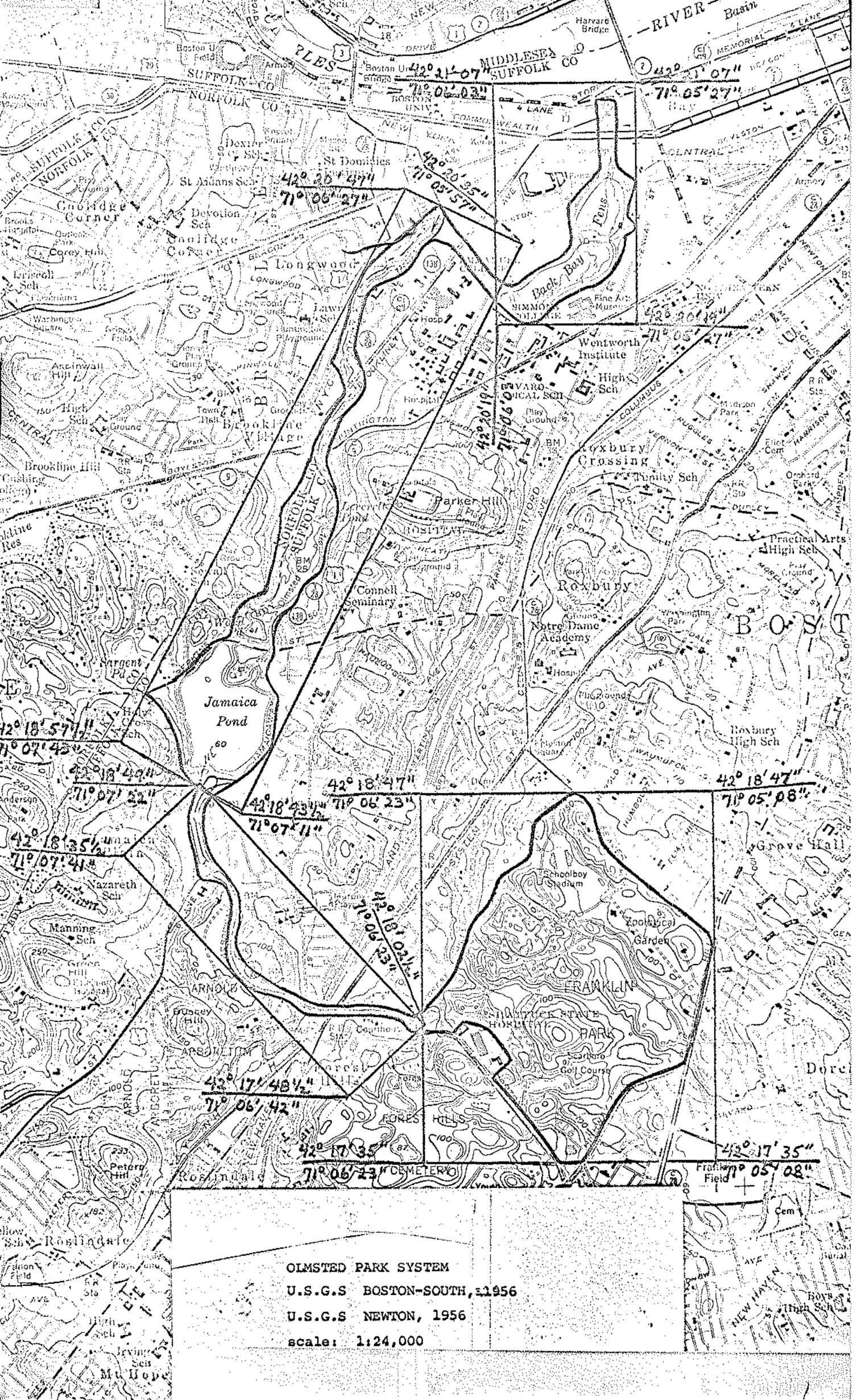
NW	42 18 47	71 06 23	
NE	42 18 47	71 05 08	
SE	42 17 35	71 05 08	
SW	42 17 35	71 06 23	

From Fabos Milde + Weinmayer
Frederick Law Olmsted Sr., 1968



PLAN FOR THE MUDDY RIVER, BOSTON

Olmsted was at his best when following the natural contours of a river valley
[Olmsted Office Portfolio]



OLMSTED PARK SYSTEM

U.S.G.S BOSTON-SOUTH, 1956

U.S.G.S NEWTON, 1956

scale: 1:24,000

1. Boat house, Jamaica Pond (Photographer: "W.H.", Metropolitan District Police, 22 February 1971)

2. Muddy River at Simmons College. (Photographer: "W.H.", Metropolitan District Police, 22 February 1971)

3. Parallel to Jamaica Way. (Photographer: "W.H.", Metropolitan District Police, 22 February 1971)

4. Jamiaca Pond. (Photographer: "W.H.", Metropolitan District Police, 22 February 1971)

5. Looking across Jamaica Pond from Brookline side to Jamaica Way. (Photographer: "W.H.", Metropolitan District Police, 22 February 1971)

6. Arborway, North view. (Photographer: "W.H.", Metropolitan District Police, 22 February 1971)

7. Fenway, Muddy River at Simmons College. (Photographer: "W.H.", Metropolitan District Police, 22 February 1971)

8. Leverett Pond, view northeast toward Boston. (Photographer: "W.H.", Metropolitan District Police, 22 February 1971)

9. Leverett Pond, Brookline. (Photographer: "W.H.", Metropolitan District Police, 22 February 1971)

10. Arborway. Northview toward Pond Street. (Photographer: "W.H.", Metropolitan District Police, 22 February 1971)

11. Franklin Park: Daniel Chester French Statue at entrance to Zoo Area. (Photographer: "W.H.", Metropolitan District Police, 22 February 1971)

12. Arborway. (Photographer: "W.H.", Metropolitan District Police, 22 February 1971)

13. Jamaicaway and Pond. (Photographer: "W.H.", Metropolitan District Police, 22 February 1971)

Form 10-301
(Dec. 1968)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES

PROPERTY MAP FORM

(Type all entries - attach to or enclose with map)

STATE	
Mass.	
COUNTY	
Norfolk-Suffolk	
FOR NPS USE ONLY	
ENTRY NUMBER	DAT

SEE INSTRUCTIONS

1. NAME

COMMON: Olmsted Park System

AND/OR HISTORIC:

2. LOCATION

STREET AND NUMBER: Back Bay Fens, Riverway, (Muddy River) Olmsted (Leverett) Park, Jamaica Park, Arborway, Franklin Park

CITY OR TOWN:
Boston, Brookline

STATE:	CODE	COUNTY:	COD
Mass.	25	Norfolk-Suffolk	21-2

3. MAP REFERENCE

SOURCE:
U.S. Geological Survey Maps Boston-South, Newton

SCALE: 1:24,000

DATE: 1956

4. REQUIREMENTS

TO BE INCLUDED ON ALL MAPS

1. Property broundaries where required.
2. North arrow.
3. Latitude and longitude reference.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES

PROPERTY PHOTOGRAPH FORM

(Type all entries - attach to or enclose with photograph)

STATE	
Mass.	
COUNTY	
Norfolk-Suffolk	
FOR NPS USE ONLY	
ENTRY NUMBER	DAT

SEE INSTRUCTIONS

1. NAME

COMMON: Olmsted Park System

AND/OR HISTORIC:

2. LOCATION

STREET AND NUMBER: Back Bay Fens, Muddy River, Olmsted (Leverett) Park, Jamaic Park, Arborway, Franklin Park

CITY OR TOWN:
Boston-Brookline

STATE:	CODE	COUNTY:	COD
Mass.	25	Norfolk-Suffolk	21-2

3. PHOTO REFERENCE

PHOTO CREDIT: Metropolitan District Police

DATE OF PHOTO: 2-22-71

NEGATIVE FILED AT: Metropolitan District Commission

4. IDENTIFICATION

DESCRIBE VIEW, DIRECTION, ETC.
Westerly view of Riverway (Muddy River) from Longwood Ave. bridge.

APPENDIX F

Laboratory Data Report

ANALYTICAL REPORT

Lab Number:	L2161430
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Kyle Block
Phone:	(617) 886-7440
Project Name:	109 BROOKLINE AVE.
Project Number:	200676-000
Report Date:	11/17/21

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

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

Project Name: 109 BROOKLINE AVE.
Project Number: 200676-000

Lab Number: L2161430
Report Date: 11/17/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2161430-01	HA21-B3_20211108	WATER	BOSTON, MA	11/08/21 12:50	11/08/21
L2161430-02	RECIEVING WATER_20211108	WATER	BOSTON, MA	11/08/21 14:15	11/08/21

Project Name:	109 BROOKLINE AVE.	**Lab Number:**	L2161430
Project Number:	200676-000	**Report Date:**	11/17/21

Case Narrative

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

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

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

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

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

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

Project Name:	109 BROOKLINE AVE.	**Lab Number:**	L2161430
Project Number:	200676-000	**Report Date:**	11/17/21

Case Narrative (continued)

Sample Receipt

L2161430-01: The sample identified as "HA21-B3_20211108" on the chain of custody was identified as "Source Water" on the container label. At the client's request, the sample is reported as "HA21-B3_20211108".

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.

Microextractables

The WG1570250-2 LCS recovey for 1,2-dibromoethane (124%), associated with L2161430-01, is outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

Total Metals

The WG1569220-2 LCS recovery, associated with L2161430-01 and -02, is above the acceptance criteria for selenium (120%); however, the associated samples are non-detect for this target analyte. The results of the original analysis are reported.

Chlorine, Total Residual

The WG1568732-4 MS recovery, performed on L2161430-01, is outside the acceptance criteria for chlorine, total residual (64%); 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: Cristin Walker

Title: Technical Director/Representative Date: 11/17/21

ORGANICS

VOLATILES

Project Name: 109 BROOKLINE AVE.
Lab Number: L2161430
Project Number: 200676-000
Report Date: 11/17/21

SAMPLE RESULTS

Lab ID: L2161430-01
Client ID: HA21-B3_20211108
Sample Location: BOSTON, MA

Date Collected: 11/08/21 12:50
Date Received: 11/08/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 11/09/21 06:05
Analyst: GT

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

Project Name: 109 BROOKLINE AVE. **Lab Number:** L2161430

Project Number: 200676-000 **Report Date:** 11/17/21

SAMPLE RESULTS

Lab ID: L2161430-01 Date Collected: 11/08/21 12:50

Client ID: HA21-B3_20211108 Date Received: 11/08/21

Sample Location: BOSTON, MA Field Prep: Not Specified

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	99		60-140
Fluorobenzene	107		60-140
4-Bromofluorobenzene	99		60-140

Project Name: 109 BROOKLINE AVE.
Lab Number: L2161430
Project Number: 200676-000
Report Date: 11/17/21

SAMPLE RESULTS

Lab ID: L2161430-01
Client ID: HA21-B3_20211108
Sample Location: BOSTON, MA
Date Collected: 11/08/21 12:50
Date Received: 11/08/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1-SIM
Analytical Date: 11/10/21 07:35
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM - Westborough Lab						
1,4-Dioxane	ND		ug/l	5.0	--	1

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

Project Name: 109 BROOKLINE AVE.
Project Number: 200676-000

Lab Number: L2161430
Report Date: 11/17/21

SAMPLE RESULTS

Lab ID: L2161430-01
Client ID: HA21-B3_20211108
Sample Location: BOSTON, MA

Date Collected: 11/08/21 12:50
Date Received: 11/08/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 11/12/21 11:46
Analyst: AMM

Extraction Method: EPA 504.1
Extraction Date: 11/11/21 15:03

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

Project Name: 109 BROOKLINE AVE. **Lab Number:** L2161430

Project Number: 200676-000 **Report Date:** 11/17/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 11/09/21 04:17
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1569061-4					
Methylene chloride	ND		ug/l	1.0	--
1,1-Dichloroethane	ND		ug/l	1.5	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.5	--
Tetrachloroethene	ND		ug/l	1.0	--
1,2-Dichloroethane	ND		ug/l	1.5	--
1,1,1-Trichloroethane	ND		ug/l	2.0	--
Benzene	ND		ug/l	1.0	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--
1,2-Dichlorobenzene	ND		ug/l	5.0	--
1,3-Dichlorobenzene	ND		ug/l	5.0	--
1,4-Dichlorobenzene	ND		ug/l	5.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
Acetone	ND		ug/l	10	--
Methyl tert butyl ether	ND		ug/l	10	--
Tert-Butyl Alcohol	ND		ug/l	100	--
Tertiary-Amyl Methyl Ether	ND		ug/l	20	--

Project Name: 109 BROOKLINE AVE. **Lab Number:** L2161430

Project Number: 200676-000 **Report Date:** 11/17/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 11/09/21 04:17
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1569061-4					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	98		60-140
Fluorobenzene	107		60-140
4-Bromofluorobenzene	99		60-140

Project Name: 109 BROOKLINE AVE. **Lab Number:** L2161430

Project Number: 200676-000 **Report Date:** 11/17/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1-SIM
Analytical Date: 11/10/21 05:51
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1569938-4					
1,4-Dioxane	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	105		60-140
4-Bromofluorobenzene	96		60-140

Project Name: 109 BROOKLINE AVE.
Project Number: 200676-000

Lab Number: L2161430
Report Date: 11/17/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 11/12/21 10:15
Analyst: AMM

Extraction Method: EPA 504.1
Extraction Date: 11/11/21 15:03

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG1570250-1						
1,2-Dibromoethane	ND		ug/l	0.010	--	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: 109 BROOKLINE AVE.

Project Number: 200676-000

Lab Number: L2161430

Report Date: 11/17/21

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: WG1569061-3								
Methylene chloride	105		-		60-140	-		28
1,1-Dichloroethane	105		-		50-150	-		49
Carbon tetrachloride	110		-		70-130	-		41
1,1,2-Trichloroethane	105		-		70-130	-		45
Tetrachloroethene	105		-		70-130	-		39
1,2-Dichloroethane	105		-		70-130	-		49
1,1,1-Trichloroethane	110		-		70-130	-		36
Benzene	115		-		65-135	-		61
Toluene	115		-		70-130	-		41
Ethylbenzene	115		-		60-140	-		63
Vinyl chloride	100		-		5-195	-		66
1,1-Dichloroethene	110		-		50-150	-		32
cis-1,2-Dichloroethene	110		-		60-140	-		30
Trichloroethene	115		-		65-135	-		48
1,2-Dichlorobenzene	105		-		65-135	-		57
1,3-Dichlorobenzene	105		-		70-130	-		43
1,4-Dichlorobenzene	110		-		65-135	-		57
p/m-Xylene	110		-		60-140	-		30
o-xylene	105		-		60-140	-		30
Acetone	108		-		40-160	-		30
Methyl tert butyl ether	100		-		60-140	-		30
Tert-Butyl Alcohol	110		-		60-140	-		30
Tertiary-Amyl Methyl Ether	105		-		60-140	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 109 BROOKLINE AVE.

Project Number: 200676-000

Lab Number: L2161430

Report Date: 11/17/21

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: WG1569061-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	99				60-140
Fluorobenzene	108				60-140
4-Bromofluorobenzene	102				60-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: 109 BROOKLINE AVE.

Project Number: 200676-000

Lab Number: L2161430

Report Date: 11/17/21

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: WG1569938-3								
1,4-Dioxane	100		-		60-140	-		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Fluorobenzene	102				60-140
4-Bromofluorobenzene	96				60-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: 109 BROOKLINE AVE.

Project Number: 200676-000

Lab Number: L2161430

Report Date: 11/17/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 01		Batch: WG1570250-2						
1,2-Dibromoethane	**124**	Q	-		80-120	-			B

Matrix Spike Analysis

Batch Quality Control

Project Name: 109 BROOKLINE AVE.

Project Number: 200676-000

Lab Number: L2161430

Report Date: 11/17/21

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*	*Column*
Microextractables by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1570250-3 WG1570250-4 QC Sample: L2161085-06 Client ID: MS Sample													
1,2-Dibromoethane	ND	0.252	0.236P	94		0.229P	92		80-120	3		20	B
1,2-Dibromo-3-chloropropane	ND	0.252	0.218	86		0.209	84		80-120	4		20	B
1,2,3-Trichloropropane	ND	0.252	0.239	95		0.220	89		80-120	8		20	B

SEMIVOLATILES

Project Name: 109 BROOKLINE AVE.
Project Number: 200676-000

Lab Number: L2161430
Report Date: 11/17/21

SAMPLE RESULTS

Lab ID: L2161430-01
Client ID: HA21-B3_20211108
Sample Location: BOSTON, MA

Date Collected: 11/08/21 12:50
Date Received: 11/08/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 11/11/21 21:46
Analyst: JG

Extraction Method: EPA 625.1
Extraction Date: 11/10/21 18:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-ethylhexyl)phthalate	ND		ug/l	2.20	--	1
Butyl benzyl phthalate	ND		ug/l	5.00	--	1
Di-n-butylphthalate	ND		ug/l	5.00	--	1
Di-n-octylphthalate	ND		ug/l	5.00	--	1
Diethyl phthalate	ND		ug/l	5.00	--	1
Dimethyl phthalate	ND		ug/l	5.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	48		42-122
2-Fluorobiphenyl	54		46-121
4-Terphenyl-d14	73		47-138

Project Name: 109 BROOKLINE AVE.
Project Number: 200676-000

Lab Number: L2161430
Report Date: 11/17/21

SAMPLE RESULTS

Lab ID: L2161430-01
Client ID: HA21-B3_20211108
Sample Location: BOSTON, MA

Date Collected: 11/08/21 12:50
Date Received: 11/08/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1-SIM
Analytical Date: 11/11/21 18:20
Analyst: ALS

Extraction Method: EPA 625.1
Extraction Date: 11/10/21 18:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	0.516		ug/l	0.100	--	1
Fluoranthene	ND		ug/l	0.100	--	1
Naphthalene	ND		ug/l	0.100	--	1
Benzo(a)anthracene	ND		ug/l	0.100	--	1
Benzo(a)pyrene	ND		ug/l	0.100	--	1
Benzo(b)fluoranthene	ND		ug/l	0.100	--	1
Benzo(k)fluoranthene	ND		ug/l	0.100	--	1
Chrysene	ND		ug/l	0.100	--	1
Acenaphthylene	ND		ug/l	0.100	--	1
Anthracene	ND		ug/l	0.100	--	1
Benzo(ghi)perylene	ND		ug/l	0.100	--	1
Fluorene	0.160		ug/l	0.100	--	1
Phenanthrene	ND		ug/l	0.100	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.100	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.100	--	1
Pyrene	ND		ug/l	0.100	--	1
Pentachlorophenol	ND		ug/l	1.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	29		25-87
Phenol-d6	23		16-65
Nitrobenzene-d5	49		42-122
2-Fluorobiphenyl	57		46-121
2,4,6-Tribromophenol	92		45-128
4-Terphenyl-d14	72		47-138

Project Name: 109 BROOKLINE AVE. **Lab Number:** L2161430

Project Number: 200676-000 **Report Date:** 11/17/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 11/11/21 20:39
Analyst: JG

Extraction Method: EPA 625.1
Extraction Date: 11/10/21 12:13

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1569590-1					
Bis(2-ethylhexyl)phthalate	ND		ug/l	2.20	--
Butyl benzyl phthalate	ND		ug/l	5.00	--
Di-n-butylphthalate	ND		ug/l	5.00	--
Di-n-octylphthalate	ND		ug/l	5.00	--
Diethyl phthalate	ND		ug/l	5.00	--
Dimethyl phthalate	ND		ug/l	5.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	84		42-122
2-Fluorobiphenyl	83		46-121
4-Terphenyl-d14	102		47-138

Project Name: 109 BROOKLINE AVE. **Lab Number:** L2161430

Project Number: 200676-000 **Report Date:** 11/17/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1-SIM
Analytical Date: 11/11/21 18:03
Analyst: ALS

Extraction Method: EPA 625.1
Extraction Date: 11/10/21 12:15

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1569603-1					
Acenaphthene	ND		ug/l	0.100	--
Fluoranthene	ND		ug/l	0.100	--
Naphthalene	ND		ug/l	0.100	--
Benzo(a)anthracene	ND		ug/l	0.100	--
Benzo(a)pyrene	ND		ug/l	0.100	--
Benzo(b)fluoranthene	ND		ug/l	0.100	--
Benzo(k)fluoranthene	ND		ug/l	0.100	--
Chrysene	ND		ug/l	0.100	--
Acenaphthylene	ND		ug/l	0.100	--
Anthracene	ND		ug/l	0.100	--
Benzo(ghi)perylene	ND		ug/l	0.100	--
Fluorene	ND		ug/l	0.100	--
Phenanthrene	ND		ug/l	0.100	--
Dibenzo(a,h)anthracene	ND		ug/l	0.100	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.100	--
Pyrene	ND		ug/l	0.100	--
Pentachlorophenol	ND		ug/l	1.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	50		25-87
Phenol-d6	37		16-65
Nitrobenzene-d5	80		42-122
2-Fluorobiphenyl	79		46-121
2,4,6-Tribromophenol	116		45-128
4-Terphenyl-d14	97		47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: 109 BROOKLINE AVE.
Project Number: 200676-000

Lab Number: L2161430
Report Date: 11/17/21

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: WG1569590-2								
Bis(2-ethylhexyl)phthalate	122		-		29-137	-		82
Butyl benzyl phthalate	111		-		1-140	-		60
Di-n-butylphthalate	115		-		8-120	-		47
Di-n-octylphthalate	118		-		19-132	-		69
Diethyl phthalate	109		-		1-120	-		100
Dimethyl phthalate	111		-		1-120	-		183

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	103				42-122
2-Fluorobiphenyl	103				46-121
4-Terphenyl-d14	114				47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: 109 BROOKLINE AVE.
Project Number: 200676-000

Lab Number: L2161430
Report Date: 11/17/21

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: WG1569603-3								
Acenaphthene	81		-		60-132	-		30
Fluoranthene	92		-		43-121	-		30
Naphthalene	70		-		36-120	-		30
Benzo(a)anthracene	94		-		42-133	-		30
Benzo(a)pyrene	97		-		32-148	-		30
Benzo(b)fluoranthene	92		-		42-140	-		30
Benzo(k)fluoranthene	101		-		25-146	-		30
Chrysene	88		-		44-140	-		30
Acenaphthylene	87		-		54-126	-		30
Anthracene	91		-		43-120	-		30
Benzo(ghi)perylene	96		-		1-195	-		30
Fluorene	87		-		70-120	-		30
Phenanthrene	86		-		65-120	-		30
Dibenzo(a,h)anthracene	102		-		1-200	-		30
Indeno(1,2,3-cd)pyrene	97		-		1-151	-		30
Pyrene	98		-		70-120	-		30
Pentachlorophenol	97		-		38-152	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 109 BROOKLINE AVE.
Project Number: 200676-000

Lab Number: L2161430
Report Date: 11/17/21

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: WG1569603-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	46				25-87
Phenol-d6	36				16-65
Nitrobenzene-d5	71				42-122
2-Fluorobiphenyl	73				46-121
2,4,6-Tribromophenol	116				45-128
4-Terphenyl-d14	93				47-138

PCBS

Project Name: 109 BROOKLINE AVE.
Project Number: 200676-000

Lab Number: L2161430
Report Date: 11/17/21

SAMPLE RESULTS

Lab ID: L2161430-01
Client ID: HA21-B3_20211108
Sample Location: BOSTON, MA

Date Collected: 11/08/21 12:50
Date Received: 11/08/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 11/10/21 13:22
Analyst: CW

Extraction Method: EPA 608.3
Extraction Date: 11/10/21 03:52
Cleanup Method: EPA 3665A
Cleanup Date: 11/10/21
Cleanup Method: EPA 3660B
Cleanup Date: 11/10/21

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	73		37-123	B
Decachlorobiphenyl	83		38-114	B
2,4,5,6-Tetrachloro-m-xylene	78		37-123	A
Decachlorobiphenyl	96		38-114	A

Project Name: 109 BROOKLINE AVE.
Project Number: 200676-000
Lab Number: L2161430
Report Date: 11/17/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 127,608.3
Analytical Date: 11/10/21 12:36
Analyst: CW

Extraction Method: EPA 608.3
Extraction Date: 11/10/21 03:52
Cleanup Method: EPA 3665A
Cleanup Date: 11/10/21
Cleanup Method: EPA 3660B
Cleanup Date: 11/10/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG1569342-1						
Aroclor 1016	ND		ug/l	0.250	--	A
Aroclor 1221	ND		ug/l	0.250	--	A
Aroclor 1232	ND		ug/l	0.250	--	A
Aroclor 1242	ND		ug/l	0.250	--	A
Aroclor 1248	ND		ug/l	0.250	--	A
Aroclor 1254	ND		ug/l	0.250	--	A
Aroclor 1260	ND		ug/l	0.200	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		37-123	B
Decachlorobiphenyl	82		38-114	B
2,4,5,6-Tetrachloro-m-xylene	82		37-123	A
Decachlorobiphenyl	100		38-114	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: 109 BROOKLINE AVE.
Project Number: 200676-000

Lab Number: L2161430
Report Date: 11/17/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG1569342-2									
Aroclor 1016	88		-		50-140	-		36	A
Aroclor 1260	89		-		8-140	-		38	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75				37-123	B
Decachlorobiphenyl	82				38-114	B
2,4,5,6-Tetrachloro-m-xylene	80				37-123	A
Decachlorobiphenyl	97				38-114	A

METALS

Project Name: 109 BROOKLINE AVE. **Lab Number:** L2161430

Project Number: 200676-000 **Report Date:** 11/17/21

SAMPLE RESULTS

Lab ID: L2161430-01 Date Collected: 11/08/21 12:50

Client ID: HA21-B3_20211108 Date Received: 11/08/21

Sample Location: BOSTON, MA 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	11/10/21 10:43	11/10/21 14:45	EPA 3005A	3,200.8	PS
Arsenic, Total	0.00153		mg/l	0.00100	--	1	11/10/21 10:43	11/10/21 14:45	EPA 3005A	3,200.8	PS
Cadmium, Total	ND		mg/l	0.00020	--	1	11/10/21 10:43	11/10/21 14:45	EPA 3005A	3,200.8	PS
Chromium, Total	ND		mg/l	0.00100	--	1	11/10/21 10:43	11/10/21 14:45	EPA 3005A	3,200.8	PS
Copper, Total	ND		mg/l	0.00100	--	1	11/10/21 10:43	11/10/21 14:45	EPA 3005A	3,200.8	PS
Iron, Total	3.95		mg/l	0.050	--	1	11/10/21 10:43	11/12/21 09:51	EPA 3005A	19,200.7	SV
Lead, Total	ND		mg/l	0.00100	--	1	11/10/21 10:43	11/10/21 14:45	EPA 3005A	3,200.8	PS
Mercury, Total	ND		mg/l	0.00020	--	1	11/10/21 13:02	11/10/21 17:32	EPA 245.1	3,245.1	AC
Nickel, Total	0.00213		mg/l	0.00200	--	1	11/10/21 10:43	11/10/21 14:45	EPA 3005A	3,200.8	PS
Selenium, Total	ND		mg/l	0.00500	--	1	11/10/21 10:43	11/10/21 14:45	EPA 3005A	3,200.8	PS
Silver, Total	ND		mg/l	0.00040	--	1	11/10/21 10:43	11/10/21 14:45	EPA 3005A	3,200.8	PS
Zinc, Total	0.01604		mg/l	0.01000	--	1	11/10/21 10:43	11/10/21 14:45	EPA 3005A	3,200.8	PS
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	691		mg/l	0.660	NA	1	11/10/21 10:43	11/12/21 09:51	EPA 3005A	19,200.7	SV
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		11/10/21 14:45	NA	107,-	

Project Name: 109 BROOKLINE AVE. **Lab Number:** L2161430

Project Number: 200676-000 **Report Date:** 11/17/21

SAMPLE RESULTS

Lab ID: L2161430-02 Date Collected: 11/08/21 14:15

Client ID: RECIEVING WATER_20211108 Date Received: 11/08/21

Sample Location: BOSTON, MA 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	11/10/21 10:43	11/10/21 14:50	EPA 3005A	3,200.8	PS
Arsenic, Total	ND		mg/l	0.00100	--	1	11/10/21 10:43	11/10/21 14:50	EPA 3005A	3,200.8	PS
Cadmium, Total	ND		mg/l	0.00020	--	1	11/10/21 10:43	11/10/21 14:50	EPA 3005A	3,200.8	PS
Chromium, Total	ND		mg/l	0.00100	--	1	11/10/21 10:43	11/10/21 14:50	EPA 3005A	3,200.8	PS
Copper, Total	0.00152		mg/l	0.00100	--	1	11/10/21 10:43	11/10/21 14:50	EPA 3005A	3,200.8	PS
Iron, Total	0.650		mg/l	0.050	--	1	11/10/21 10:43	11/12/21 09:47	EPA 3005A	19,200.7	SV
Lead, Total	0.00118		mg/l	0.00100	--	1	11/10/21 10:43	11/10/21 14:50	EPA 3005A	3,200.8	PS
Mercury, Total	ND		mg/l	0.00020	--	1	11/10/21 13:02	11/10/21 16:41	EPA 245.1	3,245.1	AC
Nickel, Total	ND		mg/l	0.00200	--	1	11/10/21 10:43	11/10/21 14:50	EPA 3005A	3,200.8	PS
Selenium, Total	ND		mg/l	0.00500	--	1	11/10/21 10:43	11/10/21 14:50	EPA 3005A	3,200.8	PS
Silver, Total	ND		mg/l	0.00040	--	1	11/10/21 10:43	11/10/21 14:50	EPA 3005A	3,200.8	PS
Zinc, Total	0.01119		mg/l	0.01000	--	1	11/10/21 10:43	11/10/21 14:50	EPA 3005A	3,200.8	PS
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	52.1		mg/l	0.660	NA	1	11/10/21 10:43	11/12/21 09:47	EPA 3005A	19,200.7	SV
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		11/10/21 14:50	NA	107,-	

Project Name: 109 BROOKLINE AVE. **Lab Number:** L2161430

Project Number: 200676-000 **Report Date:** 11/17/21

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): 01-02 Batch: WG1569220-1										
Iron, Total	ND		mg/l	0.050	--	1	11/10/21 10:43	11/12/21 09:39	19,200.7	SV

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): 01-02 Batch: WG1569220-1										
Hardness	ND		mg/l	0.660	NA	1	11/10/21 10:43	11/10/21 18:33	19,200.7	MC

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): 01-02 Batch: WG1569221-1										
Antimony, Total	ND		mg/l	0.00400	--	1	11/10/21 10:43	11/10/21 14:13	3,200.8	PS
Arsenic, Total	ND		mg/l	0.00100	--	1	11/10/21 10:43	11/10/21 14:13	3,200.8	PS
Cadmium, Total	ND		mg/l	0.00020	--	1	11/10/21 10:43	11/10/21 14:13	3,200.8	PS
Chromium, Total	ND		mg/l	0.00100	--	1	11/10/21 10:43	11/10/21 14:13	3,200.8	PS
Copper, Total	ND		mg/l	0.00100	--	1	11/10/21 10:43	11/10/21 14:13	3,200.8	PS
Lead, Total	ND		mg/l	0.00100	--	1	11/10/21 10:43	11/10/21 14:13	3,200.8	PS
Nickel, Total	ND		mg/l	0.00200	--	1	11/10/21 10:43	11/10/21 14:13	3,200.8	PS
Selenium, Total	ND		mg/l	0.00500	--	1	11/10/21 10:43	11/10/21 14:13	3,200.8	PS
Silver, Total	ND		mg/l	0.00040	--	1	11/10/21 10:43	11/10/21 14:13	3,200.8	PS
Zinc, Total	ND		mg/l	0.01000	--	1	11/10/21 10:43	11/10/21 14:13	3,200.8	PS

Prep Information

Digestion Method: EPA 3005A

Project Name: 109 BROOKLINE AVE.
Project Number: 200676-000
Lab Number: L2161430
Report Date: 11/17/21

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): 01-02 Batch: WG1569223-1										
Mercury, Total	ND		mg/l	0.00020	--	1	11/10/21 13:02	11/10/21 16:34	3,245.1	AC

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: 109 BROOKLINE AVE.

Project Number: 200676-000

Lab Number: L2161430

Report Date: 11/17/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1569220-2								
Iron, Total	104		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 Batch: WG1569220-2								
Hardness	107		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1569221-2								
Antimony, Total	88		-		85-115	-		
Arsenic, Total	98		-		85-115	-		
Cadmium, Total	93		-		85-115	-		
Chromium, Total	97		-		85-115	-		
Copper, Total	94		-		85-115	-		
Lead, Total	103		-		85-115	-		
Nickel, Total	94		-		85-115	-		
Selenium, Total	101		-		85-115	-		
Silver, Total	96		-		85-115	-		
Zinc, Total	95		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1569223-2								
Mercury, Total	96		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 109 BROOKLINE AVE.
Project Number: 200676-000

Lab Number: L2161430
Report Date: 11/17/21

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): 01-02 QC Batch ID: WG1569220-3 QC Sample: L2161430-01 Client ID: HA21-B3_20211108												
Iron, Total	3.95	1	4.98	103		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1569220-3 QC Sample: L2161430-01 Client ID: HA21-B3_20211108												
Hardness	691	66.2	759	103		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1569221-3 QC Sample: L2161430-01 Client ID: HA21-B3_20211108												
Antimony, Total	ND	0.5	0.5308	106		-	-		70-130	-		20
Arsenic, Total	0.00153	0.12	0.1190	98		-	-		70-130	-		20
Cadmium, Total	ND	0.053	0.04662	88		-	-		70-130	-		20
Chromium, Total	ND	0.2	0.1793	90		-	-		70-130	-		20
Copper, Total	ND	0.25	0.2134	85		-	-		70-130	-		20
Lead, Total	ND	0.53	0.5382	102		-	-		70-130	-		20
Nickel, Total	0.00213	0.5	0.4229	84		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1039	86		-	-		70-130	-		20
Silver, Total	ND	0.05	0.04532	91		-	-		70-130	-		20
Zinc, Total	0.01604	0.5	0.4316	83		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1569223-3 QC Sample: L2161430-02 Client ID: RECIEVING WATER_20211108												
Mercury, Total	ND	0.005	0.00458	92		-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: 109 BROOKLINE AVE.
Project Number: 200676-000

Lab Number: L2161430
Report Date: 11/17/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1569220-4 QC Sample: L2161430-01 Client ID: HA21-B3_20211108						
Iron, Total	3.95	3.88	mg/l	2		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1569220-4 QC Sample: L2161430-01 Client ID: HA21-B3_20211108						
Hardness	691	677	mg/l	2		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1569221-4 QC Sample: L2161430-01 Client ID: HA21-B3_20211108						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	0.00153	0.00154	mg/l	1		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	ND	ND	mg/l	NC		20
Copper, Total	ND	ND	mg/l	NC		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	0.00213	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.01604	0.01449	mg/l	10		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1569223-4 QC Sample: L2161430-02 Client ID: RECIEVING WATER_20211108						
Mercury, Total	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: 109 BROOKLINE AVE.
Project Number: 200676-000

Lab Number: L2161430
Report Date: 11/17/21

SAMPLE RESULTS

Lab ID: L2161430-01
Client ID: HA21-B3_20211108
Sample Location: BOSTON, MA

Date Collected: 11/08/21 12:50
Date Received: 11/08/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	10.		mg/l	5.0	NA	1	-	11/11/21 09:40	121,2540D	JT
Cyanide, Total	ND		mg/l	0.005	--	1	11/11/21 11:00	11/11/21 17:04	121,4500CN-CE	CS
Chlorine, Total Residual	ND		mg/l	0.04	--	2	-	11/08/21 23:58	121,4500CL-D	AS
Nitrogen, Ammonia	2.54		mg/l	0.075	--	1	11/09/21 08:00	11/09/21 22:28	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.00	--	1	11/11/21 19:30	11/11/21 20:00	140,1664B	TL
Phenolics, Total	ND		mg/l	0.030	--	1	11/09/21 07:14	11/09/21 11:30	4,420.1	KP
Chromium, Hexavalent	ND		mg/l	0.010	--	1	11/09/21 01:00	11/09/21 01:13	1,7196A	KA
Anions by Ion Chromatography - Westborough Lab										
Chloride	3650		mg/l	50.0	--	100	-	11/12/21 03:32	44,300.0	AT

Project Name: 109 BROOKLINE AVE.
Project Number: 200676-000

Lab Number: L2161430
Report Date: 11/17/21

SAMPLE RESULTS

Lab ID: L2161430-02
Client ID: RECIEVING WATER_20211108
Sample Location: BOSTON, MA

Date Collected: 11/08/21 14:15
Date Received: 11/08/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Nitrogen, Ammonia	0.133		mg/l	0.075	--	1	11/09/21 08:00	11/09/21 22:29	121,4500NH3-BH	AT
Chromium, Hexavalent	ND		mg/l	0.010	--	1	11/09/21 01:00	11/09/21 01:13	1,7196A	KA

Project Name: 109 BROOKLINE AVE. **Lab Number:** L2161430

Project Number: 200676-000 **Report Date:** 11/17/21

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: WG1568732-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	11/08/21 23:58	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1568742-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	11/09/21 01:00	11/09/21 01:12	1,7196A	KA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1568796-1										
Phenolics, Total	ND		mg/l	0.030	--	1	11/09/21 07:14	11/09/21 11:28	4,420.1	KP
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1568897-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	11/09/21 08:00	11/09/21 22:04	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1569927-1										
Cyanide, Total	ND		mg/l	0.005	--	1	11/11/21 11:00	11/11/21 16:45	121,4500CN-CE	CS
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1570026-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	11/11/21 09:40	121,2540D	JT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1570247-1										
TPH, SGT-HEM	ND		mg/l	4.00	--	1	11/11/21 19:30	11/11/21 20:00	140,1664B	TL
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1570406-1										
Chloride	ND		mg/l	0.500	--	1	-	11/11/21 17:59	44,300.0	AT

Lab Control Sample Analysis

Batch Quality Control

Project Name: 109 BROOKLINE AVE.

Project Number: 200676-000

Lab Number: L2161430

Report Date: 11/17/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1568732-2								
Chlorine, Total Residual	92		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1568742-2								
Chromium, Hexavalent	104		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1568796-2								
Phenolics, Total	110		-		70-130	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1568897-2								
Nitrogen, Ammonia	98		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1569927-2								
Cyanide, Total	104		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1570026-2								
Solids, Total Suspended	90		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1570247-2								
TPH	79		-		64-132	-		34

Lab Control Sample Analysis

Batch Quality Control

Project Name: 109 BROOKLINE AVE.

Project Number: 200676-000

Lab Number: L2161430

Report Date: 11/17/21

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1570406-2					
Chloride	102	-	90-110	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: 109 BROOKLINE AVE.
Project Number: 200676-000

Lab Number: L2161430
Report Date: 11/17/21

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: WG1568732-4 QC Sample: L2161430-01 Client ID: HA21-B3_20211108												
Chlorine, Total Residual	ND	0.25	0.16	**64**	Q	-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1568742-4 QC Sample: L2161430-02 Client ID: RECIEVING WATER_20211108												
Chromium, Hexavalent	ND	0.1	0.103	103		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1568796-4 QC Sample: L2161430-01 Client ID: HA21-B3_20211108												
Phenolics, Total	ND	0.4	0.38	95		-	-		70-130	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1568897-4 QC Sample: L2159491-02 Client ID: MS Sample												
Nitrogen, Ammonia	0.113	4	3.67	89		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1569927-4 QC Sample: L2161158-01 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.139	**70**	Q	-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1570247-4 QC Sample: L2159094-01 Client ID: MS Sample												
TPH	ND	19.6	19.3	98		-	-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1570406-3 QC Sample: L2159885-01 Client ID: MS Sample												
Chloride	5.86	4	9.96	102		-	-		90-110	-		18

Lab Duplicate Analysis
Batch Quality Control

Project Name: 109 BROOKLINE AVE.
Project Number: 200676-000

Lab Number: L2161430
Report Date: 11/17/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1568732-3 QC Sample: L2161430-01 Client ID: HA21-B3_20211108						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1568742-3 QC Sample: L2161430-01 Client ID: HA21-B3_20211108						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1568796-3 QC Sample: L2161430-01 Client ID: HA21-B3_20211108						
Phenolics, Total	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1568897-3 QC Sample: L2159491-02 Client ID: DUP Sample						
Nitrogen, Ammonia	0.113	0.126	mg/l	11		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1569927-3 QC Sample: L2161430-01 Client ID: HA21-B3_20211108						
Cyanide, Total	ND	0.006	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1570026-3 QC Sample: L2161322-02 Client ID: DUP Sample						
Solids, Total Suspended	510	400	mg/l	24		29
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1570247-3 QC Sample: L2158442-01 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1570406-4 QC Sample: L2159885-01 Client ID: DUP Sample						
Chloride	5.86	5.82	mg/l	1		18

Project Name: 109 BROOKLINE AVE.
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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(*)
L2161430-01A	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2161430-01A1	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2161430-01B	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2161430-01B1	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2161430-01C	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2161430-01C1	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2161430-01D	Vial unpreserved	A	NA		2.8	Y	Absent		SUB-ETHANOL(14)
L2161430-01E	Vial unpreserved	A	NA		2.8	Y	Absent		SUB-ETHANOL(14)
L2161430-01F	Vial unpreserved	A	NA		2.8	Y	Absent		SUB-ETHANOL(14)
L2161430-01G	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		504(14)
L2161430-01H	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		504(14)
L2161430-01I	Plastic 250ml unpreserved	A	7	7	2.8	Y	Absent		-
L2161430-01J	Plastic 250ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),HARDU(180),FE-UI(180),AG-2008T(180),HG-U(28),AS-2008T(180),SE-2008T(180),CR-2008T(180),SB-2008T(180),PB-2008T(180)
L2161430-01K	Plastic 250ml NaOH preserved	A	>12	>12	2.8	Y	Absent		TCN-4500(14)
L2161430-01L	Plastic 500ml H2SO4 preserved	A	<2	<2	2.8	Y	Absent		NH3-4500(28)
L2161430-01M	Plastic 950ml unpreserved	A	7	7	2.8	Y	Absent		CL-300(28),HEXCR-7196(1),TRC-4500(1)
L2161430-01N	Plastic 950ml unpreserved	A	7	7	2.8	Y	Absent		TSS-2540(7)
L2161430-01O	Amber 950ml H2SO4 preserved	A	<2	<2	2.8	Y	Absent		TPHENOL-420(28)
L2161430-01P	Amber 1000ml Na2S2O3	A	7	7	2.8	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2161430-01Q	Amber 1000ml Na2S2O3	A	7	7	2.8	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2161430-01R	Amber 1000ml Na2S2O3	A	7	7	2.8	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)

*Values in parentheses indicate holding time in days

Project Name: 109 BROOKLINE AVE.
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Lab Number: L2161430
Report Date: 11/17/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2161430-01S	Amber 1000ml Na2S2O3	A	7	7	2.8	Y	Absent		PCB-608.3(365)
L2161430-01T	Amber 1000ml Na2S2O3	A	7	7	2.8	Y	Absent		PCB-608.3(365)
L2161430-01U	Amber 1000ml Na2S2O3	A	7	7	2.8	Y	Absent		PCB-608.3(365)
L2161430-01V	Amber 1000ml HCl preserved	A	NA		2.8	Y	Absent		TPH-1664(28)
L2161430-01W	Amber 1000ml HCl preserved	A	NA		2.8	Y	Absent		TPH-1664(28)
L2161430-01X	Plastic 120ml HNO3 preserved Filtrates	A	NA		2.8	Y	Absent		HOLD-METAL-DISSOLVED(180)
L2161430-02A	Plastic 250ml unpreserved	A	7	7	2.8	Y	Absent		HEXCR-7196(1)
L2161430-02B	Plastic 250ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),HARDU(180),FE-UI(180),CU-2008T(180),HG-U(28),AG-2008T(180),AS-2008T(180),SE-2008T(180),PB-2008T(180),CR-2008T(180),SB-2008T(180)
L2161430-02C	Plastic 500ml H2SO4 preserved	A	<2	<2	2.8	Y	Absent		NH3-4500(28)

*Values in parentheses indicate holding time in days

Project Name:	109 BROOKLINE AVE.	**Lab Number:**	L2161430
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GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

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

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

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

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

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

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

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

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Footnotes

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

Terms

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

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

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

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

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

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

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

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

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

Data Qualifiers

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

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

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

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

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

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

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

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

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

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

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

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

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

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Data Qualifiers

the identification is based on a mass spectral library search.

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

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Project Number:	200676-000	**Report Date:**	11/17/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

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

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

14 Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.

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

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

107 Alpha Analytical - In-house calculation method.

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

127 Method 608.3: Organochlorine Pesticides and PCBs by GC/HSD, EPA 821-R-16-009, December 2016.

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

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

140 Method 1664,Revision B: 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-10-001, February 2010.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

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

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

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

Westborough Facility:

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

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

Mansfield Facility:

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

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

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

CHAIN OF CUSTODY

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Date Rec'd in Lab: 11/8/21

ALPHA Job #: L2161430

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

Client Information

Client: (HTA) IQHQ, Inc

Address: 465 Medford St. 2200, Boston MA 02129

Phone: 617-886-2295

Email: JThibault@, JLefkowitz

Project Information

Project Name: 100 Blackstone Ave.

Project Location: Boston, MA

Project #: 20676-020

Project Manager: K. Block, J. Thibault

ALPHA Quote #:

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL Gw1s 4 file

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 _____

Turn-Around Time

☐ Standard ☐ RUSH (only confirmed if pre-approved)

Date Due:

Additional Project Information:

2017 NPDES RGP application, please follow approved testing methods and minimum detection levels as required by EPA

ANALYSIS

- ☐ VOC 624 / 524.2
- ☐ SVOC 625 / 525.2
- ☐ ABN
- ☐ PAH 625 / 525.2
- ☐ METALS: RCRA 8 / MassDEP 14 / CAM 17 / NPDES RGP / Other
- ☐ METALS: Mercury 7470 / 7471
- ☐ RCRA
- ☐ EPH
- ☐ VPH (Targets & Fingerprint & Ranges) / Other
- ☐ PCB
- ☐ PEST
- ☐ 1,4-Dioxane
- ☐ Chlorinated Acids
- ☐ Hardness (Ca,Mg) (Lab to Calculate)
- ☐ TCN
- ☐ Hardness
- ☐ TSS

SAMPLE INFO

Filtration
☐ Field
☐ Lab to do

Preservation
☐ Lab to do

Sample Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials														Sample Comments	# of Bottles
61430-01	HA21-BS_20211108	11/8/2021	1250	GW	MJD	X	X	X	X			X	X	X	X	X		X	Vol 1,4 Dioxane	26
02	Receiving Water_20211108	"	1415	↓	MJD				X					X					NPDES RGP Metals: Ag, As, Cd, Cr, Cu, Ni, Pb, Se, Zn, Fe, Hg. Hold lab filtered metals.	3

29 TOTAL

Container Type	AV	A	P	P			A	A	PP	PA	VG	P	P	P
Preservative	H	H	A	D			H	B	AD	CD	A	E	A	A

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

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= NaHSO4
H= $Na_2S_2O_3$
I= Ascorbic Acid
J= NH4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
	11/8/2021		11/8/21 16:30
	11/8/21 16:30		11/8/21 16:30
	11/8/21 18:10		11/8/21

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

FORM NO: 01-01 (rev. 12-Mar-2012)

ALPHA ANALYTICAL

Subcontract Chain of Custody

Tek Lab, Inc.
5445 Horsehoe Lake Road
Collinsville, IL 62234-7425

Alpha Job Number
L2161430

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: L2161430

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
	HA21-83_20211108	11-08-21 12:50	WATER	Ethanol by EPA 1671 Revision A	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
		11/9/21		
Form No: AL_subcoc				

Teklab, Inc.
Environmental Laboratory

http://www.teklabinc.com/

November 17, 2021

Melissa Gulli
Alpha Analytical
145 Flanders Road
Westborough, MA 01581
TEL: (603) 319-5010
FAX:

Illinois	100226
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: L2161430 **WorkOrder:** 21110680

Dear Melissa Gulli:

TEKLAB, INC received 1 sample on 11/10/2021 9:39:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Marvin L. Darling II

Marvin L. Darling
Project Manager
(618)344-1004 ex 41
mdarling@teklabinc.com

Teklab, Inc.
Environmental Laboratory

Report Contents

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 21110680
Client Project: L2161430
Report Date: 17-Nov-21

This reporting package includes the following:

Teklab, Inc. Environmental Laboratory

Definitions

http://www.teklabinc.com/

Client: Alpha Analytical **Work Order:** 21110680

Client Project: L2161430 **Report Date:** 17-Nov-21

Abbr	Definition
*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
NC	Data is not acceptable for compliance purposes
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Teklab, Inc. Environmental Laboratory

Definitions

http://www.teklabinc.com/

Client: Alpha Analytical

Work Order: 21110680

Client Project: L2161430

Report Date: 17-Nov-21

Qualifiers

# -	Unknown hydrocarbon	B -	Analyte detected in associated Method Blank
C -	RL shown is a Client Requested Quantitation Limit	E -	Value above quantitation range
H -	Holding times exceeded	I -	Associated internal standard was outside method criteria
J -	Analyte detected below quantitation limits	M -	Manual Integration used to determine area response
ND -	Not Detected at the Reporting Limit	R -	RPD outside accepted recovery limits
S -	Spike Recovery outside recovery limits	T -	TIC(Tentatively identified compound)
X -	Value exceeds Maximum Contaminant Level		

Teklab, Inc.
Environmental Laboratory

Case Narrative

http://www.teklabinc.com/

Client: Alpha Analytical
Client Project: L2161430

Work Order: 21110680
Report Date: 17-Nov-21

Cooler Receipt Temp: 3.0 °C

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Teklab, Inc. Environmental Laboratory

Accreditations

http://www.teklabinc.com/

Client: Alpha Analytical

Client Project: L2161430

Work Order: 21110680

Report Date: 17-Nov-21

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2022	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2022	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2022	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2022	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2022	Collinsville
Arkansas	ADEQ	88-0966		3/14/2022	Collinsville
Illinois	IDPH	17584		5/31/2021	Collinsville
Kentucky	UST	0073		1/31/2022	Collinsville
Missouri	MDNR	00930		5/31/2021	Collinsville
Missouri	MDNR	930		1/31/2022	Collinsville

Teklab, Inc. Environmental Laboratory

Laboratory Results

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 21110680
Client Project: L2161430
Report Date: 17-Nov-21
Lab ID: 21110680-001
Client Sample ID: HA21-B3_20211108
Matrix: AQUEOUS
Collection Date: 11/08/2021 12:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 600 1671A, PHARMACEUTICAL MANUFACTURING INDUSTRY NON-PURGEABLE VOLATILE ORGANICS								
Ethanol	*	20		**ND**	mg/L	1	11/15/2021 15:49	R302692

Teklab, Inc. Environmental Laboratory

Quality Control Results

http://www.teklabinc.com/

Client: Alpha Analytical **Work Order:** 21110680

Client Project: L2161430 **Report Date:** 17-Nov-21

EPA 600 1671A, PHARMACEUTICAL MANUFACTURING INDUSTRY NON-PURGEABLE VOLATILE OR

Batch R302692 **SampType:** MBLK Units **mg/L**

SampID: MBLK-111521

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	*	20		**ND**						11/15/2021

Batch R302692 **SampType:** LCS Units **mg/L**

SampID: LCS-111521

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	*	20		**260**	250.0	0	102.9	70	132	11/15/2021

Batch R302692 **SampType:** MS Units **mg/L**

SampID: 21110832-001EMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	*	20		**270**	250.0	0	108.8	70	132	11/15/2021

Batch R302692 **SampType:** MSD Units **mg/L** RPD Limit **30**

SampID: 21110832-001EMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Ethanol	*	20		**250**	250.0	0	100.5	271.9	7.93	11/15/2021

Teklab, Inc.
Environmental Laboratory

Receiving Check List

http://www.teklabinc.com/

Client: Alpha Analytical
Client Project: L2161430

Work Order: 21110680
Report Date: 17-Nov-21

Carrier: UPS

Completed by: Marvin L. Darling II
On: 10-Nov-21
Marvin L. Darling

Received By: PWR

Reviewed by: Elizabeth A. Hurley
On: 10-Nov-21
Elizabeth A. Hurley

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 3.0
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☑	No ☐	No VOA vials ☐
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	NA ☐
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

Serial_No:11172117:22

L2110680

Subcontract Chain of Custody

Tek Lab, Inc.
5445 Horsehoe Lake Road
Collinsville, IL 62234-7425

Alpha Job Number
L2161430

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: L2161430

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
L2110680-001	HA21-83_20211108	11-08-21 12:50	WATER	Ethanol by EPA 1671 Revision A	

3.0°C LTG 3
@HS-EEH 11/10/21

	Relinquished By:	Date/Time:	Received By:	Date/Time:
		11/9/21	(UPS)	11/10/21 0939
Form No: AL_subcoc				

PK 11/21