HALEY ALDRICH

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NPDES RGP APPLICATION FOR TEMPORARY CONSTRUCTION DEWATERING 74 MIDDLESEX AVENUE SOMERVILLE, MASSACHUSETTS 02145

by
Haley & Aldrich, Inc.
Boston, Massachusetts

for
Environmental Protection Agency (EPA) Region 1
Boston, Massachusetts

File No. 134081-019
June 2021

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11 June 2021
File No. 134081-019

Environmental Protection Agency (EPA) Region 1
5 Post Office Square, Suite 100
Mail Code OEP06-4
Boston, Massachusetts 02109

Attention: Shauna Little

Subject: NPDES RGP Application for Temporary Construction Dewatering
74 Middlesex Avenue
Somerville, Massachusetts 02145

Dear Ms. Little:

On behalf of our client, Greystar Development, East, LLC (Greystar), Haley & Aldrich, Inc. (Haley & Aldrich) is submitting this application to request authorization under the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) for off-site discharge of temporary construction dewatering effluent during construction activities for the proposed laboratory and office building at the 74 Middlesex Avenue site (the Site) in Somerville, Massachusetts (Figure 1). A copy of the Notice of Intent (NOI) is included in Appendix A.

GENERAL SITE DESCRIPTION

The approximately 37,000 square foot (sq ft) Site is comprised of two parcels at 74 Middlesex Avenue and 845 McGrath Highway in Somerville, Massachusetts (Figures 1 and 2). The 74 Middlesex Avenue portion of the Site is occupied by an approximately 3,800 sq ft one-story building and parking lot, and the 845 McGrath Highway portion of the Site is vacant.

The project consists of construction of an 18-story laboratory and office building. Three and a half levels of below grade parking are planned below the building to be constructed to the property line on each side of the site, which covers approximately 37,000 sq ft.

The Site has a history of use for trucking storage and maintenance and storage of gasoline and fuel oil in underground storage tanks (USTs). Former buildings associated with the trucking operations were demolished around 2013 and known USTs were previously removed. There are two Massachusetts Department of Environmental Protection (MassDEP) Release Tracking Numbers (RTNs) for the Site: RTN 3-2891 (845 McGrath Highway parcel) and 3-35232 (74 Middlesex parcel). RTN 3-2891 has achieved a Temporary Solution and RTN 3-35232 is in Phase II of Massachusetts Contingency Plan (MCP) Comprehensive Response Actions. Consequently, the Site is subject to response actions under the MCP (310 CMR 40.0000). Regulated constituents associated with these RTNs primarily include petroleum

compounds and metals, particularly lead in soil and groundwater. The source of these contaminants is likely historical Site use and filling.

Based on existing Site conditions, and the regulatory compliance status of RTNs 3-2891 and 3-35232, Haley & Aldrich will prepare a Tier Classification Submittal to combine the two existing RTNs under RTN 3-2891 prior to the start of construction. Soil and groundwater management will be performed under a Release Abatement Measure (RAM) Plan submitted to MassDEP prior to the start of soil and groundwater disturbing activities.

RECEIVING WATER INFORMATION

The receiving water for the Site is the Mystic River located approximately 1,000 feet north and 1,500 feet east of the Site. The Mystic River receives water from the Site primarily from MWRA Combined Sewer Outfall (CSO) 205 located downstream of the Amelia Earhart Dam as shown in Figure 3A. Occasionally, during high stormwater discharge events, water also discharges from the Site to the Mystic River via the City of Somerville CSO 205A shown in Figure 3A.

On 22 April 2021, Haley & Aldrich collected a receiving water sample from the Mystic River downstream of the Amelia Earhart Dam near primary CSO 205 (Figure 3A). The surface water sample was collected and submitted to Alpha Analytical, Inc. of Westborough, Massachusetts (Alpha) for laboratory analysis of total metals, ammonia, and hardness. Field parameters, including pH and temperature, were collected from the surface water sample at the time of sampling. The results are summarized in Table I. Receiving water temperature is also noted on the effluent limitations input calculation page in Appendix B. The laboratory data report is provided in Appendix C.

The seven-day-ten-year flow (7Q10) of the receiving water could not be calculated at either the primary CSO (205) or overflow CSO (205A) using the U.S. Geological Survey (USGS) StreamStats program. Therefore, the resulting Dilution Factor (DF) at both outfall locations is zero. On 13 May 2021 MassDEP confirmed the Streamstats 7Q10 result and that a DF of zero was appropriate for calculating site specific effluent limits by email. A copy of the email correspondence is provided in Appendix B.

Copies of the “EnterData” and “SaltwaterResults” tabs from the excel file provided as an additional resource by EPA are included in Appendix B and will be transmitted electronically with the NOI. The calculated effluent limitations are included for reference in Table I.

SOURCE WATER INFORMATION

To evaluate groundwater (source water) quality at the Site, groundwater samples were collected from monitoring well HA105(OW) on 13 and 22 April 2021. Haley & Aldrich sampled the well twice: once for MWRA construction dewatering parameters and once for additional parameters required under the NPDES RGP because the discharge path for the Site is to the Mystic River via an MWRA combined sewer overflow (CSO; see Discharge information Section below). The monitoring well is located within the planned building footprint area requiring temporary construction dewatering, as shown on Figure 2.

The groundwater samples were submitted to Alpha for laboratory analysis of 2017 NPDES RGP parameters including VOCs, SVOCs including polycyclic aromatic hydrocarbons (PAHs), total metals, total petroleum hydrocarbons (TPH), extractable hydrocarbons (EPH), pesticides, PCBs, total suspended solids, chloride, total cyanide, total phenols, ammonia, and total residual chlorine. The samples were also tested for extractable petroleum hydrocarbons (EPH) and oil and grease. Field parameters, including pH and temperature, were collected at the time of groundwater sampling.

The source water quality data are summarized in Table I. Laboratory data reports are included in Appendix C.

Ethanol Discussion

The groundwater samples were tested for ethanol because of Site history as a former filling station and trucking storage and maintenance facility, and the results of both past and recent investigations and testing that indicate petroleum products potentially containing ethanol were used, stored, or released at the site. Ethanol testing results are in Table 1. Ethanol was not detected above laboratory reporting limits.

DISCHARGE INFORMATION

Water from construction dewatering activities will be discharged into storm drains via temporary pipes located along the north, west, and south limits of the project site. The storm drain locations and proposed discharge route is shown on Figures 3A and 3B. The discharge route flows north along the east side of the Site down Middlesex Avenue (City of Somerville Main Drain). During normal stormwater discharge, discharge flows from the City of Somerville Main Drain to the MWRA Somerville Marginal Conduit. The Conduit runs parallel to the southern bank of the Mystic River and discharges to Outfall 205 in the Mystic River (downstream of the Amelia Earhart Dam). Occasionally during high stormwater discharge events, effluent bypasses the Marginal Conduit and discharges to outfall 205A directly from the City of Somerville Main Drain. We anticipate effluent discharge rates to be 50 gallons per minute (gpm) or less, with occasional peak flows of about 100 gpm during significant precipitation events. The temporary dewatering is planned to be conducted using sumps and pumps within the limits of the excavation.

DEWATERING TREATMENT SYSTEM INFORMATION

An effluent treatment system will be designed and implemented by the Contractor to meet the applicable 2017 RGP Discharge Effluent Criteria. Prior to discharge, dewatering effluent will be routed through a sedimentation tank and bag filters to remove suspended solids and undissolved regulated constituents, as shown on Figure 4.

TREATMENT CHEMICALS AND ADDITIVES INFORMATION

A pH adjustment system will likely be added to the sedimentation tank (estimated to be 18,000-gallon capacity) at the head of the treatment system. Sulfuric acid (70-100%) will be used to lower the pH as necessary to maintain pH within the prescribed RGP discharge requirements of 6.5 to 8.3, and dosing

will be automatically controlled using a meter pump, pH controller, and probe. The sulfuric acid will be stored in a 55-gallon drum within secondary containment.

In accordance with Part 2.5.3.d.i of the RGP, the product information, including chemical formula, SDS, CAS registry number, manufacturer, and associated hazards, toxicological and ecological information, and manufacturer information, including dosing and metering, are provided in Appendix D. A summary of control measures for proper handling and spill prevention are incorporated in the Best Management Practices Plan and include regular maintenance to ensure proper operation; daily monitoring for the condition of the treatment system; storage in appropriate containers in accordance with local, state, and federal regulations; and appropriate training for employees who have direct or indirect responsibility for ensuring compliance with the RGP.

The estimated maximum magnitude of application ("worst case/ceiling value") would be 48 gallons of sulfuric acid per day at a flow rate of 0.144 million gallons per day, which equates to a concentration of 333 ppm. The lethal concentration to kill 50% of the fish population (LC50) in a receiving water is 500 ppm per the SDS in Attachment B. So even at ceiling values, the sulfuric acid would not exceed LC50. Actual daily application of sulfuric acid is anticipated to be 7 to 8 gallons/day or less for a dose concentration of 85 ppm. The pH adjustment would be installed near the influent of the treatment chain and would be buffered by the rest of the treatment chain. Additionally, this dose of sulfuric acid would be diluted by other flows in the stormwater discharge and the Mystic River.

Part F of the RGP NOI requires that chemical additives be identified if applied to the effluent prior to discharge. To satisfy the confirmation requirements of RGP Part 2.5.3.d.ii:

1. The addition of a pH conditioner will not add any pollutants in concentrations which exceed permit effluent limitations;
2. The use of this chemical will not result in the exceedance of any applicable water quality standard; and
3. This chemical will not add any pollutants that would justify the application of permit conditions that are different from or absent in the permit.

DETERMINATION OF ENDANGERED SPECIES ACT ELIGIBILITY

According to the 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 E. Based on the results of the determination, the project and action area are considered to meet FWS Criterion A because no listed species or critical habitat are present within the project action area.

DOCUMENTATION OF NATIONAL HISTORIC PRESERVATION ACT 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 are within the Site. The Site's primary outfall discharges to a Nation wetlands Inventory (NWI) estuarine and

marine deep-water wetland (E1UBLx). The Site meets Criterion A. Documentation is included in Appendix F.

SUPPLEMENTAL INFORMATION

Owner and operator information are provided below for reference:

Owner:

Greystar Development, East, LLC
One Federal Street, Suite 1804
Boston, Massachusetts 02110
Attn: Ryan Souls, Director, Development

Operator:

Consigli Construction Company
266 Summer Street
Boston, Massachusetts 02210
Attn: Christopher Harris

CLOSING

Thank you very much for your consideration. Please feel free to contact us should you wish to discuss the information contained herein or if you need additional information.

Sincerely yours,
HALEY & ALDRICH, INC.

Kristen M. Ingraham
Geologist

Heather A. Ballantyne, P.G. (NH), LSP
Senior Project Manager

Enclosures:

- Table I – Summary of Water Quality Data
- Figure 1 – Project Locus
- Figure 2 – Site and Subsurface Exploration Plan
- Figure 3A – Proposed Dewatering Discharge Route
- Figure 3B – Proposed Dewatering Discharge Location Plan
- Figure 4 – Proposed Treatment System Schematic
- Appendix A – Notice of Intent (NOI)
- Appendix B – Effluent Limitations Documentation
- Appendix C – Laboratory Data Reports
- Appendix D – Chemicals and Additives Information
- Appendix E – Endangered Species Act Assessment
- Appendix F – National Historic Preservation Act Review

TABLES

TABLE I
SUMMARY OF WATER QUALITY DATA
74 MIDDLESEX AVENUE
SOMERVILLE, MA
FILE NO. 134081

	Action Level			
Location Name		HA20-105(OW)	HA20-105(OW)	MYSTIC-1
Sample Name	NPDES Site Specific	HA20-105(OW)_2021-0413	HA20-105(OW)_2021-0422	MYSTIC-1_2021-0422
Sample Date	Criteria	04/13/2021	04/22/2021	04/22/2021
Lab Sample ID		L2118775-01	L2120709-01	L2120709-02
Volatile Organic Compounds (ug/L)				
1,1,1-Trichloroethane	200	ND (20)	ND (2)	-
1,1,2,2-Tetrachloroethane	NA	ND (10)	-	-
1,1,2-Trichloroethane	5	**ND (15)**	ND (1.5)	-
1,1-Dichloroethane	70	ND (15)	ND (1.5)	-
1,1-Dichloroethene	3.2	**ND (10)**	ND (1)	-
1,2-Dibromoethane (Ethylene Dibromide)	0.05	-	ND (0.01)	-
1,2-Dichlorobenzene	600	ND (50)	ND (5)	-
1,2-Dichloroethane	5	**ND (15)**	ND (1.5)	-
1,2-Dichloropropane	NA	ND (35)	-	-
1,3-Dichlorobenzene	320	ND (50)	ND (5)	-
1,3-Dichloropropene	NA	ND (15)	-	-
1,4-Dichlorobenzene	5	**ND (50)**	ND (5)	-
2-Butanone (Methyl Ethyl Ketone)	NA	ND (100)	-	-
2-Chloroethyl vinyl ether	NA	ND (100)	-	-
2-Hexanone	NA	ND (100)	-	-
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	NA	ND (100)	-	-
Acetone	7970	ND (100)	ND (10)	-
Acrolein	NA	ND (80)	-	-
Acrylonitrile	NA	ND (100)	-	-
Benzene	5^	**ND (10)**	ND (1)	-
Bromodichloromethane	NA	ND (10)	-	-
Bromoform	NA	ND (10)	-	-
Bromomethane (Methyl Bromide)	NA	ND (50)	-	-
Carbon disulfide	NA	ND (50)	-	-
Carbon tetrachloride	4.4	**ND (10)**	ND (1)	-
Chlorobenzene	NA	ND (35)	-	-
Chloroethane	NA	ND (20)	-	-
Chloroform (Trichloromethane)	NA	ND (10)	-	-
Chloromethane (Methyl Chloride)	NA	ND (50)	-	-
cis-1,2-Dichloroethene	70	ND (10)	2	-
cis-1,3-Dichloropropene	NA	ND (15)	-	-
Dibromochloromethane	NA	ND (10)	-	-
Dibromomethane	NA	ND (10)	-	-
Ethanol	Report	-	ND (20000)	-
Ethylbenzene	^	ND (10)	ND (1)	-
m,p-Xylenes	^	ND (20)	ND (2)	-
Methylene chloride	4.6	**ND (10)**	ND (1)	-
o-Xylene	^	ND (10)	ND (1)	-
Styrene	NA	ND (10)	-	-
Tetrachloroethene	5	**ND (10)**	ND (1)	-
Toluene	^	ND (10)	ND (1)	-
trans-1,2-Dichloroethene	NA	ND (15)	-	-
trans-1,3-Dichloropropene	NA	ND (15)	-	-
Trichloroethene	5	**ND (10)**	ND (1)	-
Trichlorofluoromethane (CFC-11)	NA	ND (50)	-	-
Vinyl acetate	NA	ND (100)	-	-
Vinyl chloride	2	**ND (10)**	ND (1)	-
Xylene (total)	^	ND (10)	ND (1)	-
Total BTEX	100^	ND	ND	-
Volatile Organic Compounds SIM (ug/L)				
1,4-Dioxane	200	ND (5)	-	-
Semi-Volatile Organic Compounds (ug/L)				
Benzo(a)anthracene	1*	**ND (2)**	-	-
Benzo(a)pyrene	1*	**ND (2)**	-	-
Benzo(b)fluoranthene	1*	**ND (2)**	-	-
Benzo(k)fluoranthene	1*	**ND (2)**	-	-
Chrysene	1*	**ND (2)**	-	-
Dibenz(a,h)anthracene	1*	**ND (2)**	-	-
Indeno(1,2,3-cd)pyrene	1*	**ND (2)**	-	-
Total Group I PAHs	1*	ND	-	-
Acenaphthene	**	ND (2)	-	-
Acenaphthylene	**	ND (2)	-	-
Anthracene	**	ND (2)	-	-
Benzo(g,h,i)perylene	**	ND (2)	-	-
Fluoranthene	**	ND (2)	-	-
Fluorene	**	ND (2)	-	-
Naphthalene	20**	ND (2)	-	-
Phenanthrene	**	ND (2)	-	-
Pyrene	**	ND (2)	-	-
Total Group II PAHs	100**	ND	-	-
bis(2-Ethylhexyl)phthalate	101	ND (2.2)	-	-
Butyl benzylphthalate	NA	ND (5)	-	-
Diethyl phthalate	NA	ND (5)	-	-
Dimethyl phthalate	NA	ND (5)	-	-
Di-n-butylphthalate	NA	ND (5)	-	-
Di-n-octyl phthalate	NA	ND (5)	-	-
Total Phthalates	190	ND	-	-
2,4,5-Trichlorophenol	NA	ND (5)	-	-
2,4,6-Trichlorophenol	NA	ND (5)	-	-
2,4-Dichlorophenol	NA	ND (5)	-	-
2,4-Dimethylphenol	NA	ND (5)	-	-
2,4-Dinitrophenol	NA	ND (20)	-	-
2-Chlorophenol	NA	ND (2)	-	-
2-Methylphenol (o-Cresol)	NA	ND (5)	-	-
2-Nitrophenol	NA	ND (5)	-	-
3&4-Methylphenol	NA	ND (5)	-	-
4,6-Dinitro-2-methylphenol	NA	ND (10)	-	-
4-Chloro-3-methylphenol	NA	ND (2)	-	-
4-Nitrophenol	NA	ND (10)	-	-
Pentachlorophenol	1	**ND (5)**	-	-
Phenol	NA	ND (5)	-	-
Total Phenols (ug/L)	1080	-	ND (30)	-
1,2,4-Trichlorobenzene	NA	ND (5)	-	-
2,2'-oxybis(1-Chloropropane)	NA	ND (2)	-	-
2,4-Dinitrotoluene	NA	ND (5)	-	-
2,6-Dinitrotoluene	NA	ND (5)	-	-
2-Chloronaphthalene	NA	ND (2)	-	-
2-Methylnaphthalene	NA	ND (2)	-	-
3,3'-Dichlorobenzidine	NA	ND (5)	-	-
4-Bromophenyl phenyl ether	NA	ND (2)	-	-
4-Chloroaniline	NA	ND (5)	-	-
4-Chlorophenyl phenyl ether	NA	ND (2)	-	-
Azobenzene	NA	ND (2)	-	-
Benzidine	NA	ND (20)	-	-
Benzoic acid	NA	ND (50)	-	-
Benzyl Alcohol	NA	ND (2)	-	-
bis(2-Chloroethoxy)methane	NA	ND (5)	-	-
bis(2-Chloroethyl)ether	NA	ND (2)	-	-
Dibenzofuran	NA	ND (2)	-	-
Hexachlorobenzene	NA	ND (2)	-	-
Hexachlorobutadiene	NA	ND (2)	-	-
Hexachlorocyclopentadiene	NA	ND (10)	-	-
Hexachloroethane	NA	ND (2)	-	-
Isophorone	NA	ND (5)	-	-
Nitrobenzene	NA	ND (2)	-	-
N-Nitrosodimethylamine	NA	ND (2)	-	-
N-Nitrosodi-n-propylamine	NA	ND (5)	-	-
N-Nitrosodiphenylamine	NA	ND (2)	-	-

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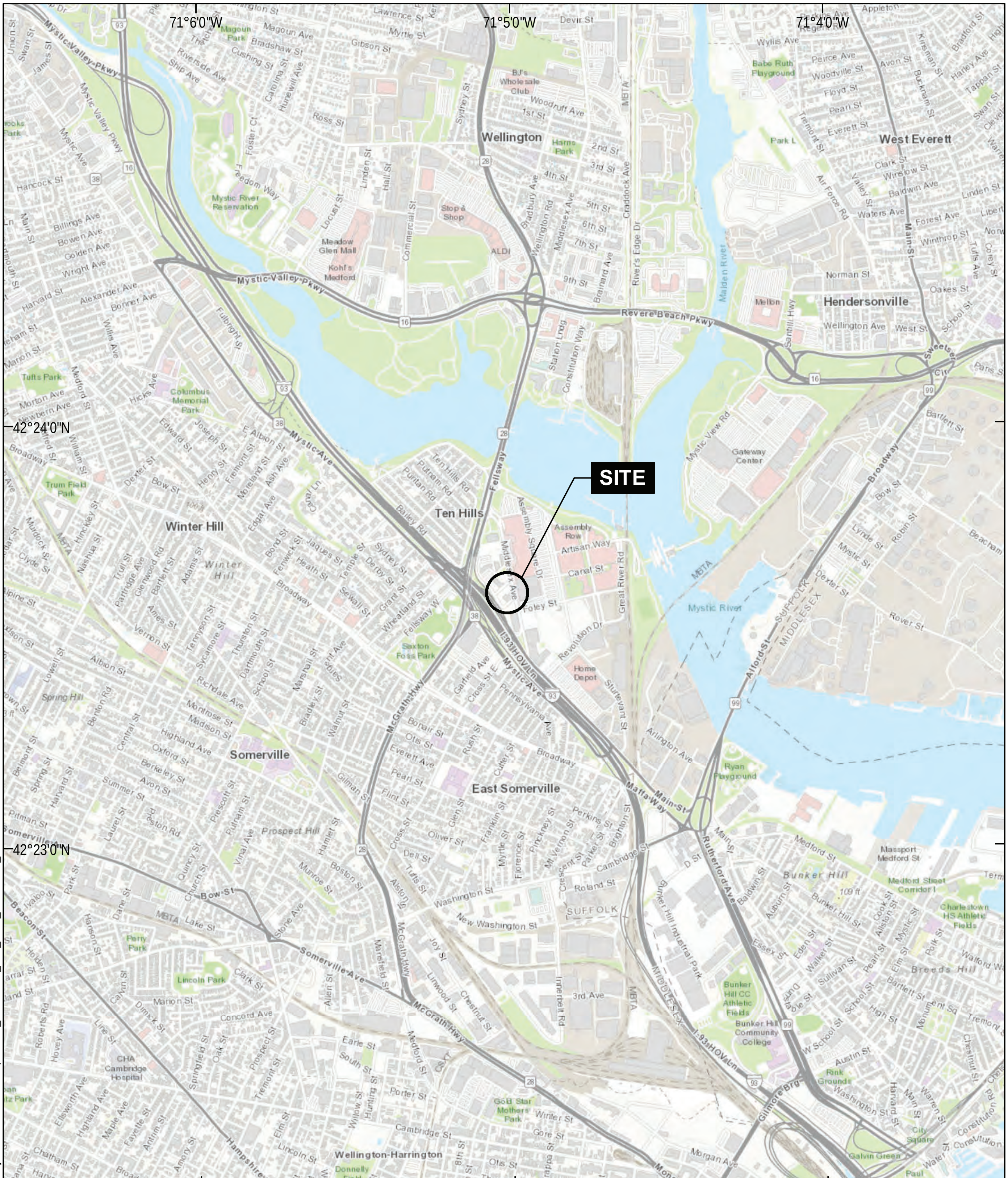
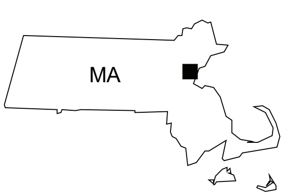
Sample Name	NPDES Site Specific	HA20-105(OW)_2021-0413	HA20-105(OW)_2021-0422	MYSTIC-1_2021-0422
Sample Date	Criteria	04/13/2021	04/22/2021	04/22/2021
Lab Sample ID		L2118775-01	L2120709-01	L2120709-02
Semi-Volatile Organic Compounds (ug/L)				
Benzo(a)anthracene	1*	-	ND (0.1)	-
Benzo(a)pyrene	1*	-	ND (0.1)	-
Benzo(b)fluoranthene	1*	-	ND (0.1)	-
Benzo(k)fluoranthene	1*	-	ND (0.1)	-
Chrysene	1*	-	ND (0.1)	-
Dibenz(a,h)anthracene	1*	-	ND (0.1)	-
Indeno(1,2,3-cd)pyrene	1*	-	ND (0.1)	-
Total Group I PAHs	1*	ND	-	-
Acenaphthene	**	-	ND (0.1)	-
Acenaphthylene	**	-	ND (0.1)	-
Anthracene	**	-	ND (0.1)	-
Benzo(g,h,i)perylene	**	-	ND (0.1)	-
Fluoranthene	**	-	ND (0.1)	-
Fluorene	**	-	ND (0.1)	-
Naphthalene	20**	-	ND (0.1)	-
Phenanthrene	**	-	ND (0.1)	-
Pyrene	**	-	ND (0.1)	-
Total Group II PAHs	100**	ND	-	-
Pentachlorophenol	1	-	ND (1)	-
Total Petroleum Hydrocarbons (ug/L)				
Oil and Grease (HEM), Total		ND (3600)	-	-
Petroleum hydrocarbons	5000	-	4520	-
EPH (ug/L)				
MADEP C11-C22 Aromatic Hydrocarbons, Adjusted	NA	ND (100)	-	-
MADEP C11-C22 Aromatic Hydrocarbons, Unadjusted	NA	ND (100)	-	-
MADEP C19-C36 Aliphatic Hydrocarbons	NA	ND (100)	-	-
MADEP C9-C18 Aliphatic Hydrocarbons	NA	ND (100)	-	-
2-Methylnaphthalene	NA	ND (0.4)	-	-
Acenaphthene	NA	ND (0.4)	-	-
Acenaphthylene	NA	ND (0.4)	-	-
Anthracene	NA	ND (0.4)	-	-
Benzo(a)anthracene	NA	ND (0.4)	-	-
Benzo(a)pyrene	NA	ND (0.2)	-	-
Benzo(b)fluoranthene	NA	ND (0.4)	-	-
Benzo(g,h,i)perylene	NA	ND (0.4)	-	-
Benzo(k)fluoranthene	NA	ND (0.4)	-	-
Chrysene	NA	ND (0.4)	-	-
Dibenz(a,h)anthracene	NA	ND (0.4)	-	-
Fluoranthene	NA	ND (0.4)	-	-
Fluorene	NA	ND (0.4)	-	-
Indeno(1,2,3-cd)pyrene	NA	ND (0.4)	-	-
Naphthalene	NA	ND (0.4)	-	-
Phenanthrene	NA	ND (0.4)	-	-
Pyrene	NA	ND (0.4)	-	-
Inorganic Compounds (ug/L)				
Antimony, Total	206	ND (4)	-	ND (20)
Arsenic, Total	104	ND (1)	-	ND (5)
Cadmium, Total	10.2	ND (0.2)	-	ND (1)
Chromium, Total	323	ND (1)	ND (5)	ND (5)
Chromium III (Trivalent), Total	323	-	ND (10)	-
Chromium VI (Hexavalent), Dissolved	323	-	ND (10)	-
Copper, Total	242	1.3	-	ND (5)
Hardness, Total	NA	-	284000	1650000
Iron, Total	5000	**25600**	-	442
Lead, Total	160	2.9	-	ND (5)
Mercury, Total	0.739	ND (0.2)	-	ND (0.2)
Nickel, Total	1450	ND (2)	-	ND (10)
Selenium, Total	235.8	ND (5)	-	ND (25)
Silver, Total	35.1	ND (0.4)	-	ND (2)
Zinc, Total	420	19.8	-	ND (50)
Other				
pH (lab), Total (pH units)		6.6	-	-
Ammonia, Total (ug/L)	Report	-	1080	228
Chloride, Total (ug/L)	Report	-	353000	-
Chlorine, residual, Total (ug/L)	7.5	-	**ND (20)**	-
Cyanide, Total (ug/L)	178000	-	ND (5)	-
Total Suspended Solids (TSS) (ug/L)	30000	-	26000	-
PCBs (ug/L)				
Aroclor-1016 (PCB-1016)	+	ND (0.25)	-	-
Aroclor-1221 (PCB-1221)	+	ND (0.25)	-	-
Aroclor-1232 (PCB-1232)	+	ND (0.25)	-	-
Aroclor-1242 (PCB-1242)	+	ND (0.25)	-	-
Aroclor-1248 (PCB-1248)	+	ND (0.25)	-	-
Aroclor-1254 (PCB-1254)	+	ND (0.25)	-	-
Aroclor-1260 (PCB-1260)	+	ND (0.2)	-	-
SUM PCBs	0.000064+	ND	-	-
Pesticides (ug/L)				
4,4'-DDD	NA	ND (0.04)	-	-
4,4'-DDE	NA	ND (0.04)	-	-
4,4'-DDT	NA	ND (0.04)	-	-
Aldrin	NA	ND (0.02)	-	-
alpha-BHC	NA	ND (0.02)	-	-
alpha-Chlordane	NA	ND (0.02)	-	-
beta-BHC	NA	ND (0.02)	-	-
Chlordane	NA	ND (0.2)	-	-
delta-BHC	NA	ND (0.02)	-	-
Dieldrin	NA	ND (0.04)	-	-
Endosulfan I	NA	ND (0.02)	-	-
Endosulfan II	NA	ND (0.04)	-	-
Endosulfan sulfate	NA	ND (0.04)	-	-
Endrin	NA	ND (0.04)	-	-
Endrin aldehyde	NA	ND (0.04)	-	-
Endrin ketone	NA	ND (0.04)	-	-
gamma-BHC (Lindane)	NA	ND (0.02)	-	-
gamma-Chlordane	NA	ND (0.02)	-	-
Heptachlor	NA	ND (0.02)	-	-
Heptachlor epoxide	NA	ND (0.02)	-	-
Methoxychlor	NA	ND (0.1)	-	-
Toxaphene	NA	ND (0.4)	-	-

ABBREVIATIONS AND NOTES:
-: Not Analyzed
µg/L: micrograms per liter
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 detection limit
RC: MCP Reportable Concentration

- Analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.
- **Black bold** values indicate an exceedance of applicable NPDES RGP Project Effluent Limit Criteria
^: Indicates effluent limit is limited as total BTEX of 100 ug/l.
*: Indicates effluent limit is limited as total Group I PAHs of 1 ug/l.
**: Indicates effluent limit is limited as total Group II PAHs of 100 ug/l.
+: Indicates effluent limit is limited as total PCBs of 0.000064 ug/l.

FIGURES





N

MAP SOURCE: ESRI
SITE COORDINATES: 71°5'1"W 42°23'36"N

HALEY ALDRICH

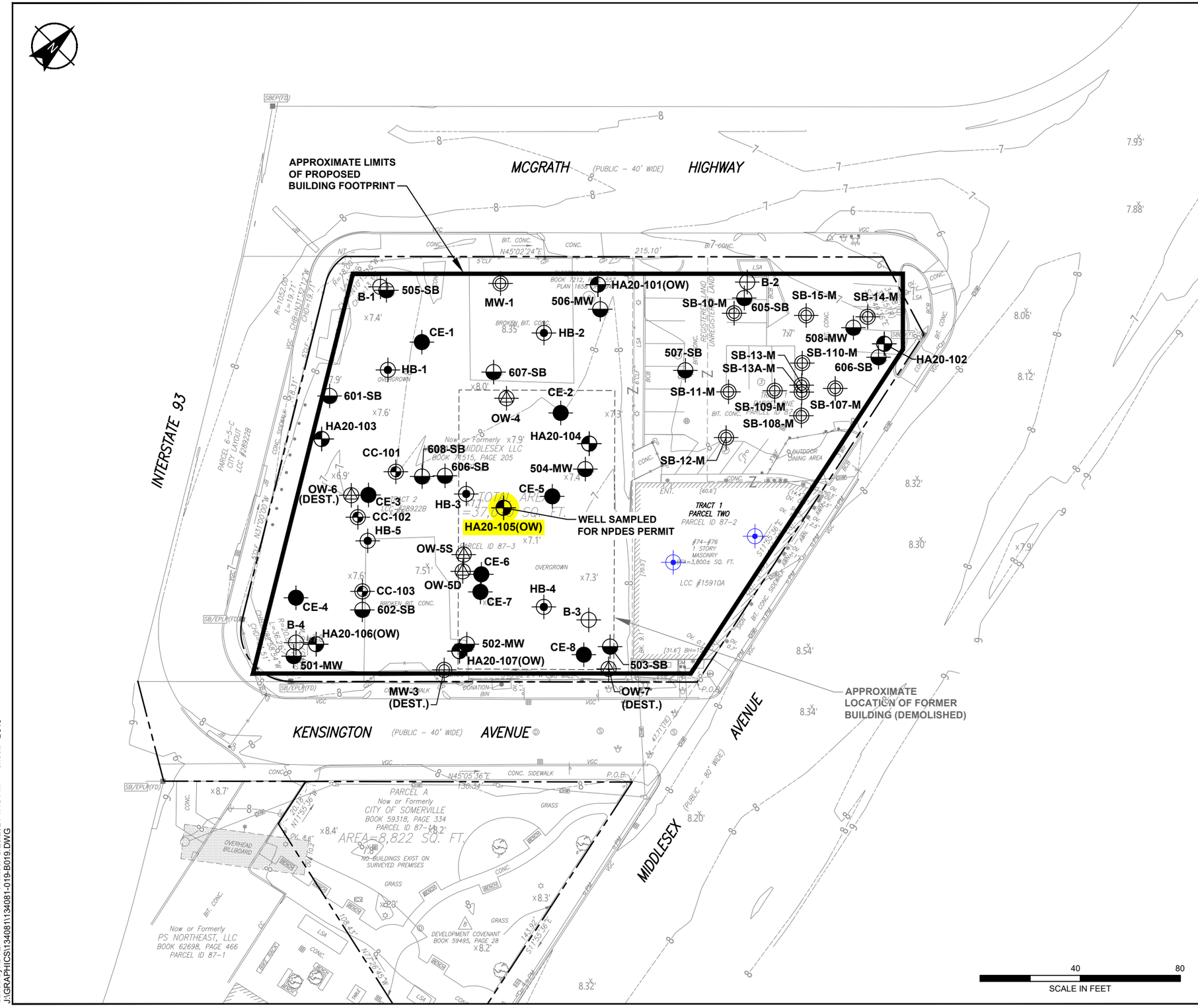
PROPOSED DEVELOPMENT
74 MIDDLESEX AVENUE
SOMERVILLE, MASSACHUSETTS

PROJECT LOCUS

APPROXIMATE SCALE: 1 IN = 2000 FT
JUNE 2021

FIGURE 1

GIS FILE PATH: \\haleyaldrich.com\share\CF\Projects\134081\GIS\Maps\2020_11\134081_008_0001_PROJECT_LOCUS.mxd — USER: hwachholz — LAST SAVED: 11/17/2020 3:37:55 PM



LEGEND

	APPROXIMATE LOCATION OF PROPOSED PRECHARACTERIZATION EXPLORATION WITHIN THE EXISTING BUILDING. BORINGS TO BE COMPLETED AFTER DEMOLITION
HA20-101	DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING PREFORMED BY NORTHERN DRILL SERVICE, OBSERVED BY HALEY & ALDRICH, INC. FROM 27 OCTOBER 2020 TO 12 NOVEMBER 2020
B-1	DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING PERFORMED BY SOIL EXPLORATION CO., MONITORED BY DESIGN CONSULTANTS, INC. FROM 5 TO 13 JUNE 2017
CE-1	DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING BY COOPERSTOWN IN 2017
505-SB	DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING DRILLED BY BORING BY E&E IN 2017
HB-1	DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING DRILLED BY NEW PATH IN 2014
CC-101	DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING DRILLED BY COLER AND COLANTONIO IN 2008
OW-1	DESIGNATION AND APPROXIMATE LOCATION OF OBSERVATION WELL INSTALLED BY GES IN 1990
SB-10-M	DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING DRILLED BY MILLER ENGINEERING IN 1989
(OW)	INDICATES OBSERVATION WELL TO BE INSTALLED IN COMPLETED BOREHOLE

NOTES

1. BASE PLAN TAKEN FROM ELECTRONIC FILE TITLED "17685-ALTA-SUBMIT-10-30-20.DWG" FROM FELDMAN LAND SURVEYORS, DATED 30 OCTOBER 2020.
2. ELEVATIONS ARE IN FEET AND REFER TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. ELEVATION CONTOURS AND SPOT ELEVATIONS ARE TAKEN FROM ELECTRONIC FILE TITLED "14652.00-EX-20200416.DWG" PREPARED BY VHB, DATED 7 APRIL 2020.
4. APPROXIMATE LIMITS OF PROPOSED BUILDING FOOTPRINT ARE TAKEN FROM ELECTRONIC FILE TITLED "20_1015 CLIENT MTG FINAL.PDF" PREPARED BY ELKUS MANFREDI ARCHITECTS, DATED 15 OCTOBER 2020.

HALEY ALDRICH

PROPOSED DEVELOPMENT
74 MIDDLESEX AVENUE
SOMERVILLE, MASSACHUSETTS

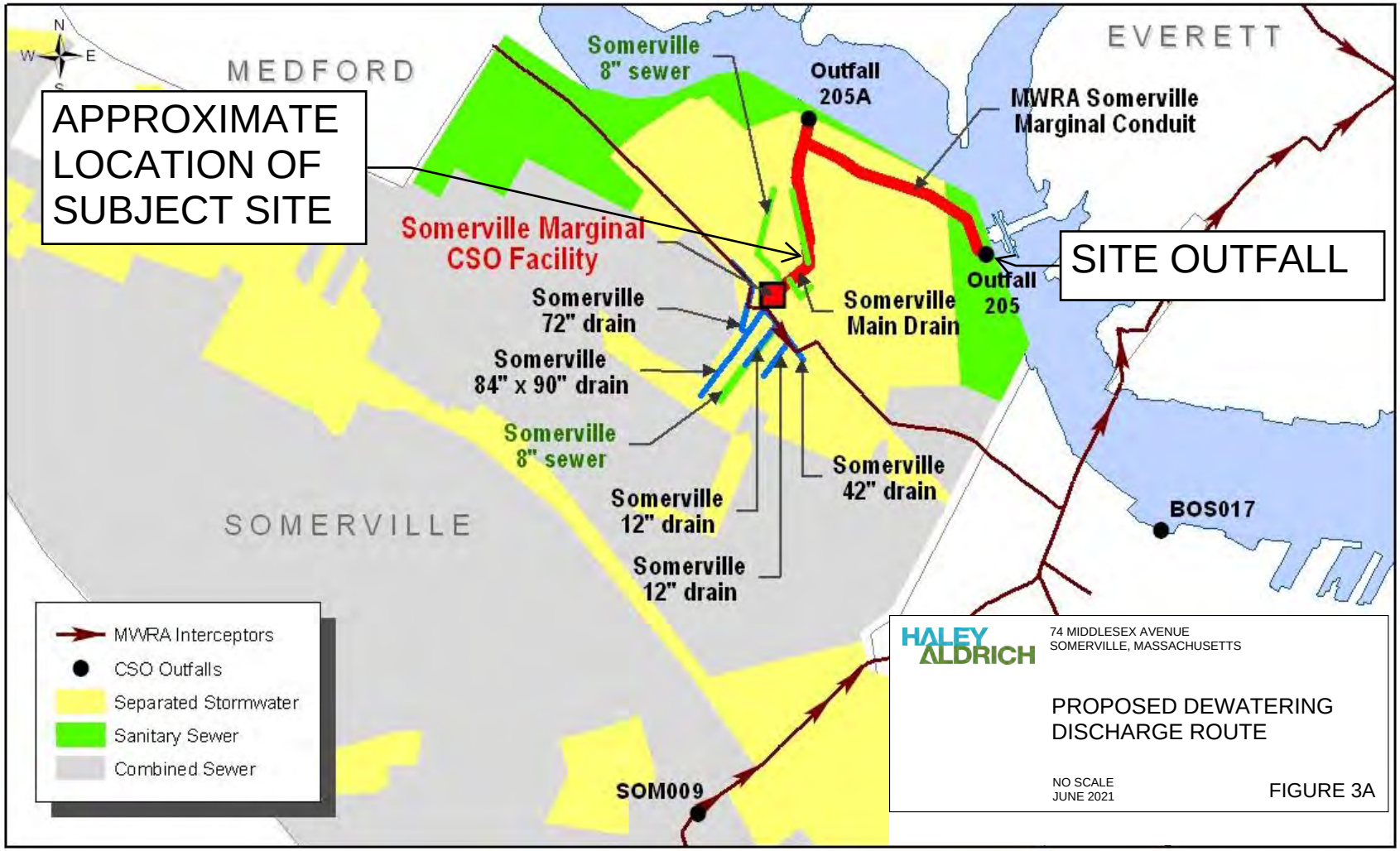
SITE AND SUBSURFACE EXPLORATION LOCATION PLAN

SCALE: AS SHOWN
JUNE 2021

FIGURE 2

Saved by: DTE Printed: 5/28/2021 1:10 PM Sheet: B019
J:\GRAPHICS\134081\134081-019-B019.DWG

About the Somerville Marginal CSO Facility



- City of Somerville Main Drain, Middlesex Ave. – 7'x 6" – 11'x 0" (2,147' Linear Feet & 25 connections)
- MWRA Somerville Marginal Conduit – 7'x6" – 11'x 0" (1,588' Linear Feet & 5 connections)
- MWRA Metropolitan Sewer, Section 35 – 39" x 47.5"
- City of Somerville drain and 8" sewer, McGrath Highway

LIMITS OF SUBJECT SITE: 74 MIDDLESEX AVE/845 MCGRATH HIGHWAY

PROPSED STORMDRAINS FOR DISCHARGE

74 MIDD

845 MCGR

120 MIDD

132 MIDD

23 CUMM

20 CUMM

133 MIDD

0 MIDD

50 MIDD

Middlesex Park

Middlesex Plaza

FELLSWAY

CUMMINGS ST

MIDDLESEX AVE

MCGRATH HWY

MYSTIC AVE

KENSINGTON AVE

18 " RC

18 " VC

10 " RC

12 " Unk

8 " Unk

8 " PC

15 " RC

16 " VC

12 " VC

24 " VC

12 " RC

48 " RC

90 x 132 " RC

Unk

8 " VC

90 x 120 " RC

12 " RC

15 " RC

24 " RC

30 " RC

36 " RC

10 " VC

18 " VC

94 " RC

10 " PC

10 " Unk

8 " PC

8 " VC

10 " Unk 10 " RC

12 " VC

8 " VC

Unk

28

38

93

HALEY ALDRICH

74 MIDDLESEX AVE
SOMERVILLE, MASSACHUSETTS

PROPOSED DEWATERING DISCHARGE LOCATION PLAN

SCALE: AS SHOWN
JUNE 2021

FIGURE 3B

MIddlesex Ave Sewer and Drain Infrastructure

- Sewer Stormwater Net Junctions
- Catch Basins
- Storm Discharge Points
- SW Manholes
- SS Manholes

SW Gravity Mains
- Storm
- Combined
- Storm Over Sanitary
- Storm Over Sanitary Over Underdrain
- Storm Over Combined
- Storm Over Combined Over Underdrain
- Storm Over Storm Over Sanitary

SS Gravity Mains
- Sanitary
- Sanitary Over Underdrain
- Combined
- Combined Over Underdrain
- Storm Over Sanitary
- Storm Over Sanitary Over Underdrain
- Storm Over Combined
- Storm Over Storm Over Sanitary

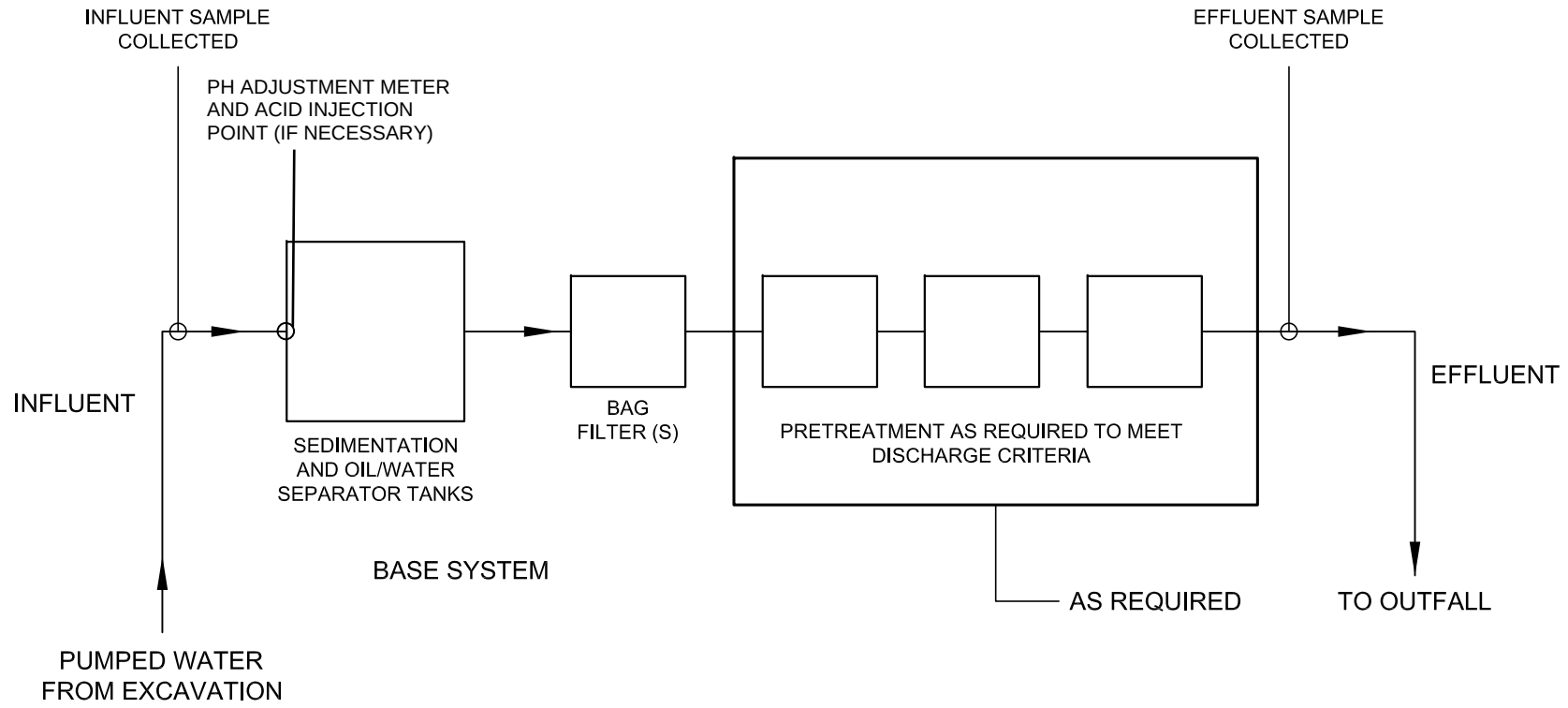
Highways
- State Highway
- Interstate Highway

Parcels

Scale: 1" = 100 ft

January 22, 2020
Source: City of Somerville GIS Viewer

G:\38625\NPDES\FIGURES\COPY-A142.DWG



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.
2. PH ADJUSTMENT ACID STORAGE TO BE ADJACENT TO TREATMENT NEAR INJECTION POINT. REFER TO EQUIPMENT CUT SHEETS IN APPENDIX D.

HALEY ALDRICH

74 MIDDLESEX AVENUE
SOMERVILLE, MASSACHUSETTS

PROPOSED TREATMENT SYSTEM SCHEMATIC

SCALE: NONE
JUNE 2021

FIGURE 4

APPENDIX A

Notice of Intent (NOI)

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:
74 Middlesex Avenue</td><td colspan="3">Site address: 74 Middlesex Avenue
Street: Middlesex Avenue</td></tr>
<tr><td>City: Somerville</td><td>State: MA</td><td>Zip: 02145</td></tr>
<tr><td rowspan="4">2. Site owner
Greystar Development East, LLC

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
■ Other; if so, specify:</td><td colspan="3">Contact Person: Ryan Souls</td></tr>
<tr><td colspan="2">Telephone: 857.254.1329</td><td>Email: ryan.souls@greystar.com</td></tr>
<tr><td colspan="3">Mailing address: One Federal Street Suite 1804
Street: Federal Street</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02110</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
Consigli Construction Company</td><td colspan="3">Contact Person: Christopher Harris</td></tr>
<tr><td colspan="2">Telephone: 774.217.0155</td><td>Email: charris@consigli.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: 266 Summer Street</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02210</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):
3-2891 and 3-35232
☐ 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):
Mystic River	MA71-03_2008	SB/CSO

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

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

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

3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP. The Mystic River is on the MA Integrated List and all uses are considered impaired. No TMDLs are currently available.

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.	ND (see confirmation email)
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.	0

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: 13 May 2021

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: construction site dewatering

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

D. Discharge information

1.The discharge(s) is a(n) (check any that apply): ☐ Existing discharge ■ New discharge ☐ New source	
Outfall(s): CITY OF SOMERVILLE OUTFALL 205 (south of the Amelia Earhart Dam)-PRIMARY MWRA CSO 205A (north of the Amelia Earhart Damn)-SECONDARY Refer to Haley & Aldrich Letter.	Outfall location(s): (Latitude, Longitude) Outfall 205: Approx. 42.394036, -71.076064 Outfall 205A: Approx. 42.398949, -71.083681 (Refer to Figure 2 of Haley & Aldrich Letter)
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: Combined stormwater main on Middlesex Avenue to the MWRA Somerville Marginal Conduit and outfalls at Outfall 205. See attached Figure 3A. ☐ 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: The NOI will be submitted to the City of Somerville concurrently with NPDES Application/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): August 2021 - December 2022 Indicate if the discharge is expected to occur over a duration of: ☐ less than 12 months ■ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

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

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

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

* - Detected in soil only

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✔	1	4500NH3-	0.075	1.08	1.08	Report mg/L	---
Chloride		✔	1	44,300	12500	353000	353000	Report µg/l	---
Total Residual Chlorine	✔		1	4500CL-D	0.02	<0.02	<0.02	0.2 mg/L	7.5
Total Suspended Solids		✔	1	2540D	5	26	26	30 mg/L	---
Antimony		✔ *	1	3,200.8	4	<4	<4	206 µg/L	640
Arsenic		✔ *	1	3,200.8	1	<1	<1	104 µg/L	36
Cadmium		✔ *	1	3,200.8	0.2	<0.2	<0.2	10.2 µg/L	8.9
Chromium III	✔		1	107,-	10	<10	<10	323 µg/L	100
Chromium VI		✔ *	1	1.7196A	10	<10	<10	323 µg/L	50
Copper		✔	1	3,200.8	1	1.3	1.3	242 µg/L	3.7
Iron		✔	1	3,200.8	50	25600	25600	5,000 µg/L	---
Lead		✔	1	3,200.8	1	2.9	2.9	160 µg/L	8.5
Mercury		✔ *	1	3,245.1	0.2	<0.2	<0.2	0.739 µg/L	1.11
Nickel		✔	1	3,200.8	2	<2	<2	1,450 µg/L	8.3
Selenium		✔ *	1	3,200.8	5	<5	<5	235.8 µg/L	71
Silver		✔ *	1	3,200.8	0.4	<0.4	<0.4	35.1 µg/L	2.2
Zinc		✔	1	3,200.8	10	19.8	19.8	420 µg/L	86
Cyanide	✔		1	4500CN-C	5	<5	<5	178 mg/L	1
B. Non-Halogenated VOCs									
Total BTEX	✔		1	NA	NA	0	0	100 µg/L	---
Benzene	✔		2	624.1	1	<1	<1	5.0 µg/L	---
1,4 Dioxane	✔		1	624.1-SIM	5	<5	<5	200 µg/L	---
Acetone		✔ *	2	624.1	10	<10	<10	7.97 mg/L	---
Phenol	✔		1	8270D	5	<5	<5	1,080 µg/L	300

* - Detected in soil only

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	✔		2	624.1	1	<1	<1	4.4 µg/L	1.6
1,2 Dichlorobenzene	✔		2	8270D	5	<5	<5	600 µg/L	---
1,3 Dichlorobenzene	✔		2	8270D	5	<5	<5	320 µg/L	---
1,4 Dichlorobenzene	✔		2	8270D	5	<5	<5	5.0 µg/L	---
Total dichlorobenzene	✔		2	8270D	5	<5	<5	763 µg/L in NH	---
1,1 Dichloroethane	✔		2	624.1	1.5	<1.5	<1.5	70 µg/L	---
1,2 Dichloroethane	✔		2	624.1	1.5	<1.5	<1.5	5.0 µg/L	---
1,1 Dichloroethylene	✔		2	624.1	1	<1	<1	3.2 µg/L	---
Ethylene Dibromide	✔		1	624.1	0.01	<0.01	<0.01	0.05 µg/L	---
Methylene Chloride	✔		2	624.1	1	<1	<1	4.6 µg/L	---
1,1,1 Trichloroethane	✔		2	624.1	2	<2	<2	200 µg/L	---
1,1,2 Trichloroethane	✔		2	624.1	1.5	<1.5	<1.5	5.0 µg/L	---
Trichloroethylene	✔		2	624.1	1	<1	<1	5.0 µg/L	---
Tetrachloroethylene	✔		2	624.1	1	<1	<1	5.0 µg/L	3.3
cis-1,2 Dichloroethylene		✔	2	624.1	1	2	2	70 µg/L	---
Vinyl Chloride	✔		2	624.1	1	<1	<1	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔		1	625.1		ND	ND	190 µg/L	---
Diethylhexyl phthalate	✔		1	625.1	2.2	<2.2	<2.2	101 µg/L	2.2
Total Group I PAHs		✔ *	1	625.1-SIM		ND	ND	1.0 µg/L	---
Benzo(a)anthracene		✔ *	1	625.1-SIM	0.4	<0.4	<0.4	As Total PAHs	0.0038
Benzo(a)pyrene		✔ *	1	625.1-SIM	0.2	<0.2	<0.2		0.0038
Benzo(b)fluoranthene		✔ *	1	625.1-SIM	0.4	<0.4	<0.4		0.0038
Benzo(k)fluoranthene		✔ *	1	625.1-SIM	0.4	<0.4	<0.4		0.0038
Chrysene		✔ *	1	625.1-SIM	0.4	<0.4	<0.4		0.0038
Dibenzo(a,h)anthracene		✔ *	1	625.1-SIM	0.4	<0.4	<0.4		0.0038
Indeno(1,2,3-cd)pyrene		✔ *	1	625.1-SIM	0.4	<0.4	<0.4		0.0038

* - Detected in soil only

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
Total Group II PAHs		✔ *	1	625.1-SIM	0.1	<0.4	<0.4	100 µg/L	---
Naphthalene		✔ *	1	625.1-SIM	0.4	<0.4	<0.4	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs		✔ *	1	608.3	0.25	<0.25	<0.25	0.000064 µg/L	---
Pentachlorophenol	✔		1	625.1-SIM	5	<5	<5	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons		✔ *	1	4.52	4	4.52	4.52	5.0 mg/L	---
Ethanol		✔	1	600 1671A	20000	<20000	<20000	Report mg/L	---
Methyl-tert-Butyl Ether			1	624.1	10	<10	<10	70 µg/L	20
tert-Butyl Alcohol	✔		1	624.1	100	<100	<100	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔		1	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, Total		✔	1	19,200.7	284	284	284		
Salinity**		✔	1	**					

* - Detected in soil only
** - Salinity measured at outfall location on 28 May 2021

Additional compounds detected in soil only:

VOCs
Acetone
Carbon disulfide
Chloroform (Trichloromethane)
Naphthalene
Toluene
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
2-Phenylbutane (sec-Butylbenzene)
Benzene
Cymene (p-Isopropyltoluene)
Ethylbenzene
Isopropylbenzene (Cumene)
Methyl Tert Butyl Ether
n-Butylbenzene
n-Propylbenzene
tert-Butylbenzene
Tetrachloroethene
trans-1,2-Dichloroethene
Trichloroethene
Xylene (total)

SVOCs
2-Methylnaphthalene
Acenaphthene
Acenaphthylene
Anthracene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Benzo(k)fluoranthene
Chrysene
Dibenz(a,h)anthracene
Dibenzofuran
Fluoranthene
Fluorene
Indeno(1,2,3-cd)pyrene
Naphthalene
Phenanthrene
Phenol
Pyrene

Other
Lead TCLP
Aroclor-1254 (PCB-1254)
Total Solids (%)
Oxidation reduction potential (millivolts)
Conductivity (umhos/cm)
MADEP C5-C8 Aliphatic Hydrocarbons
MADEP C9-C12 Aliphatic Hydrocarbons, Adjusted
MADEP C9-C12 Aliphatic Hydrocarbons

Metals
Chromium VI (Hexavalent), Dissolved
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Mercury
Nickel
Selenium
Silver
Vanadium

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:

Applied as necessary to meet effluent discharge criteria.

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 will be routed through a sedimentation tank and a bag filter and other necessary treatment components (potentially: Ion exchange, GAC, oil/water seperator), to remove suspended solids and undissolved chemical constituents, as shown on Figure 4 of the NPDES permit application.

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: GAC, Ion Exchange and other treatments as needed to meet discharge criteria

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: Flow meter Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	
Provide the proposed maximum effluent flow in gpm.	100
Provide the average effluent flow in gpm.	50
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:
pH conditioners may be added to the treatment system if necessary to meet effluent limits

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)).

See attached manufacturers cut sheets and SDSs for equipment which may be utilized if necessary. This information is only included as a contingency and is not currently needed based on groundwater data. Exact specifications on frequency, duration, quantity, and method of application are not known at this time. If the system eventually requires chemical additives, these details will be provided to EPA.

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 at the site upon initiation of discharge.	
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ■ No ☐
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested. 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 ☐ The NOI will be submitted to the City of Somerville concurrently with NPDES Application/NOI. 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: Ch. D. Harris	Date: 6.11.2021
Print Name and Title: Christopher Harris, Consigli Construction	

APPENDIX B

Effluent Limitations Documentation

Enter number values in green boxes below

Enter values in the units specified

↓

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

Enter a dilution factor, if other than zero

↓

0

Enter values in the units specified

↓

0	C_d = Enter influent hardness in **mg/L** $CaCO_3$
1650	C_s = Enter receiving water hardness in **mg/L** $CaCO_3$

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

↓

7.95	pH in **Standard Units**
15.8	Temperature in **°C**
0.228	Ammonia in **mg/L**
1650	Hardness in **mg/L** $CaCO_3$
10.97	Salinity in **ppt**
20	Antimony in **µg/L**
5	Arsenic in **µg/L**
1	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
5	Copper in **µg/L**
442	Iron in **µg/L**
5	Lead in **µg/L**
0.2	Mercury in **µg/L**
10	Nickel in **µg/L**
25	Selenium in **µg/L**
2	Silver in **µg/L**
50	Zinc in **µg/L**

Enter **influent** concentrations in the units specified

↓

0	TRC in **µg/L**
1080	Ammonia in **mg/L**
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**
1.3	Copper in **µg/L**
25600	Iron in **µg/L**
2.9	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
19.8	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

APPENDIX C

Laboratory Data Reports

ANALYTICAL REPORT

Lab Number:	L2118775
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Heather Ballantyne
Phone:	(617) 886-3061
Project Name:	74 MIDDLESEX AVENUE
Project Number:	134081-009
Report Date:	04/21/21

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: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2118775-01	HA20-105(OW)_2021-0413	WATER	SOMERVILLE, MA	04/13/21 13:45	04/13/21

Project Name:	74 MIDDLESEX AVENUE	**Lab Number:**	L2118775
Project Number:	134081-009	**Report Date:**	04/21/21

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:	74 MIDDLESEX AVENUE	**Lab Number:**	L2118775
Project Number:	134081-009	**Report Date:**	04/21/21

Case Narrative (continued)

Sample Receipt

The analyses performed were specified by the client.

L2118775-01: The sample identified as "HA20-105(OW)_2021-0413" on the chain of custody was identified as "HA21-105(OW)_2021-0413" on the container label. At the client's request, the sample is reported as "HA20-105(OW)_2021-0413".

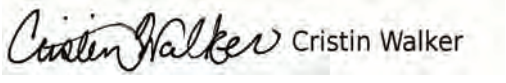
Volatile Organics by Method 624

L2118775-01D was analyzed on a dilution. The MWRA detection limits were achieved.

Volatile Organics by SIM

The WG1487995-3 LCS recovery, associated with L2118775-01, is above the acceptance criteria for 1,4-dioxane (152%); however, the associated sample is non-detect for this target analyte. The results of the original analysis are reported.

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

Authorized Signature:  Cristin Walker

Title: Technical Director/Representative Date: 04/21/21

ORGANICS

VOLATILES

Project Name: 74 MIDDLESEX AVENUE
Lab Number: L2118775
Project Number: 134081-009
Report Date: 04/21/21

SAMPLE RESULTS

Lab ID: L2118775-01
Client ID: HA20-105(OW)_2021-0413
Sample Location: SOMERVILLE, MA

Date Collected: 04/13/21 13:45
Date Received: 04/13/21
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1-SIM
Analytical Date: 04/19/21 12:10
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	99		60-140
4-Bromofluorobenzene	91		60-140

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

SAMPLE RESULTS

Lab ID: L2118775-01 D
Client ID: HA20-105(OW)_2021-0413
Sample Location: SOMERVILLE, MA

Date Collected: 04/13/21 13:45
Date Received: 04/13/21
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 04/14/21 23:06
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	10	--	10
1,1-Dichloroethane	ND		ug/l	15	--	10
Chloroform	ND		ug/l	10	--	10
Carbon tetrachloride	ND		ug/l	10	--	10
1,2-Dichloropropane	ND		ug/l	35	--	10
Dibromochloromethane	ND		ug/l	10	--	10
1,1,2-Trichloroethane	ND		ug/l	15	--	10
2-Chloroethylvinyl ether	ND		ug/l	100	--	10
Tetrachloroethene	ND		ug/l	10	--	10
Chlorobenzene	ND		ug/l	35	--	10
Trichlorofluoromethane	ND		ug/l	50	--	10
1,2-Dichloroethane	ND		ug/l	15	--	10
1,1,1-Trichloroethane	ND		ug/l	20	--	10
Bromodichloromethane	ND		ug/l	10	--	10
trans-1,3-Dichloropropene	ND		ug/l	15	--	10
cis-1,3-Dichloropropene	ND		ug/l	15	--	10
1,3-Dichloropropene, Total	ND		ug/l	15	--	10
Bromoform	ND		ug/l	10	--	10
1,1,2,2-Tetrachloroethane	ND		ug/l	10	--	10
Benzene	ND		ug/l	10	--	10
Toluene	ND		ug/l	10	--	10
Ethylbenzene	ND		ug/l	10	--	10
Chloromethane	ND		ug/l	50	--	10
Bromomethane	ND		ug/l	50	--	10
Vinyl chloride	ND		ug/l	10	--	10
Chloroethane	ND		ug/l	20	--	10
1,1-Dichloroethene	ND		ug/l	10	--	10
trans-1,2-Dichloroethene	ND		ug/l	15	--	10

Project Name: 74 MIDDLESEX AVENUE
Lab Number: L2118775
Project Number: 134081-009
Report Date: 04/21/21

SAMPLE RESULTS

Lab ID: L2118775-01 D
Client ID: HA20-105(OW)_2021-0413
Sample Location: SOMERVILLE, MA

Date Collected: 04/13/21 13:45
Date Received: 04/13/21
Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
cis-1,2-Dichloroethene	ND		ug/l	10	--	10
Trichloroethene	ND		ug/l	10	--	10
1,2-Dichlorobenzene	ND		ug/l	50	--	10
1,3-Dichlorobenzene	ND		ug/l	50	--	10
1,4-Dichlorobenzene	ND		ug/l	50	--	10
p/m-Xylene	ND		ug/l	20	--	10
o-xylene	ND		ug/l	10	--	10
Xylenes, Total	ND		ug/l	10	--	10
Styrene	ND		ug/l	10	--	10
Acetone	ND		ug/l	100	--	10
Carbon disulfide	ND		ug/l	50	--	10
2-Butanone	ND		ug/l	100	--	10
Vinyl acetate	ND		ug/l	100	--	10
4-Methyl-2-pentanone	ND		ug/l	100	--	10
2-Hexanone	ND		ug/l	100	--	10
Acrolein	ND		ug/l	80	--	10
Acrylonitrile	ND		ug/l	100	--	10
Dibromomethane	ND		ug/l	10	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	100		60-140
Fluorobenzene	91		60-140
4-Bromofluorobenzene	98		60-140

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 04/14/21 13:08
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1486572-4					
Methylene chloride	ND		ug/l	1.0	--
1,1-Dichloroethane	ND		ug/l	1.5	--
Chloroform	ND		ug/l	1.0	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,2-Dichloropropane	ND		ug/l	3.5	--
Dibromochloromethane	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.5	--
2-Chloroethylvinyl ether	ND		ug/l	10	--
Tetrachloroethene	ND		ug/l	1.0	--
Chlorobenzene	ND		ug/l	3.5	--
Trichlorofluoromethane	ND		ug/l	5.0	--
1,2-Dichloroethane	ND		ug/l	1.5	--
1,1,1-Trichloroethane	ND		ug/l	2.0	--
Bromodichloromethane	ND		ug/l	1.0	--
trans-1,3-Dichloropropene	ND		ug/l	1.5	--
cis-1,3-Dichloropropene	ND		ug/l	1.5	--
1,3-Dichloropropene, Total	ND		ug/l	1.5	--
Bromoform	ND		ug/l	1.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--
Benzene	ND		ug/l	1.0	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Chloromethane	ND		ug/l	5.0	--
Bromomethane	ND		ug/l	5.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	2.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
trans-1,2-Dichloroethene	ND		ug/l	1.5	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 04/14/21 13:08
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1486572-4					
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	--
Styrene	ND		ug/l	1.0	--
Acetone	ND		ug/l	10	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	10	--
Vinyl acetate	ND		ug/l	10	--
4-Methyl-2-pentanone	ND		ug/l	10	--
2-Hexanone	ND		ug/l	10	--
Acrolein	ND		ug/l	8.0	--
Acrylonitrile	ND		ug/l	10	--
Methyl tert butyl Ether	ND		ug/l	10	--
Dibromomethane	ND		ug/l	1.0	--
Tert-Butyl Alcohol	ND		ug/l	100	--
Tertiary-Amyl Methyl Ether	ND		ug/l	20	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	104		60-140
Fluorobenzene	96		60-140
4-Bromofluorobenzene	98		60-140

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1-SIM
Analytical Date: 04/19/21 11:19
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1487995-4					
1,4-Dioxane	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	99		60-140
4-Bromofluorobenzene	95		60-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

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: WG1486572-3								
Methylene chloride	95		-		60-140	-		28
1,1-Dichloroethane	105		-		50-150	-		49
Chloroform	105		-		70-135	-		54
Carbon tetrachloride	95		-		70-130	-		41
1,2-Dichloropropane	105		-		35-165	-		55
Dibromochloromethane	90		-		70-135	-		50
1,1,2-Trichloroethane	100		-		70-130	-		45
2-Chloroethylvinyl ether	95		-		1-225	-		71
Tetrachloroethene	110		-		70-130	-		39
Chlorobenzene	95		-		65-135	-		53
Trichlorofluoromethane	100		-		50-150	-		84
1,2-Dichloroethane	110		-		70-130	-		49
1,1,1-Trichloroethane	105		-		70-130	-		36
Bromodichloromethane	110		-		65-135	-		56
trans-1,3-Dichloropropene	90		-		50-150	-		86
cis-1,3-Dichloropropene	105		-		25-175	-		58
Bromoform	80		-		70-130	-		42
1,1,2,2-Tetrachloroethane	105		-		60-140	-		61
Benzene	110		-		65-135	-		61
Toluene	110		-		70-130	-		41
Ethylbenzene	110		-		60-140	-		63
Chloromethane	85		-		1-205	-		60
Bromomethane	80		-		15-185	-		61

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

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: WG1486572-3								
Vinyl chloride	90		-		5-195	-		66
Chloroethane	100		-		40-160	-		78
1,1-Dichloroethene	100		-		50-150	-		32
trans-1,2-Dichloroethene	105		-		70-130	-		45
cis-1,2-Dichloroethene	110		-		60-140	-		30
Trichloroethene	100		-		65-135	-		48
1,2-Dichlorobenzene	95		-		65-135	-		57
1,3-Dichlorobenzene	95		-		70-130	-		43
1,4-Dichlorobenzene	95		-		65-135	-		57
p/m-Xylene	102		-		60-140	-		30
o-xylene	100		-		60-140	-		30
Styrene	95		-		60-140	-		30
Acetone	102		-		40-160	-		30
Carbon disulfide	100		-		60-140	-		30
2-Butanone	104		-		60-140	-		30
Vinyl acetate	100		-		60-140	-		30
4-Methyl-2-pentanone	110		-		60-140	-		30
2-Hexanone	114		-		60-140	-		30
Acrolein	108		-		60-140	-		30
Acrylonitrile	100		-		60-140	-		60
Methyl tert butyl Ether	90		-		60-140	-		30
Dibromomethane	85		-		70-130	-		30
Tert-Butyl Alcohol	80		-		60-140	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

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: WG1486572-3								
Methylene chloride	95		-		60-140	-		28
1,1-Dichloroethane	105		-		50-150	-		49
Chloroform	105		-		70-135	-		54
Carbon tetrachloride	95		-		70-130	-		41
1,2-Dichloropropane	105		-		35-165	-		55
Dibromochloromethane	90		-		70-135	-		50
1,1,2-Trichloroethane	100		-		70-130	-		45
2-Chloroethylvinyl ether	95		-		1-225	-		71
Tetrachloroethene	110		-		70-130	-		39
Chlorobenzene	95		-		65-135	-		53
Trichlorofluoromethane	100		-		50-150	-		84
1,2-Dichloroethane	110		-		70-130	-		49
1,1,1-Trichloroethane	105		-		70-130	-		36
Bromodichloromethane	110		-		65-135	-		56
trans-1,3-Dichloropropene	90		-		50-150	-		86
cis-1,3-Dichloropropene	105		-		25-175	-		58
Bromoform	80		-		70-130	-		42
1,1,2,2-Tetrachloroethane	105		-		60-140	-		61
Benzene	110		-		65-135	-		61
Toluene	110		-		70-130	-		41
Ethylbenzene	110		-		60-140	-		63
Chloromethane	85		-		1-205	-		60
Bromomethane	80		-		15-185	-		61

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

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: WG1486572-3								
Vinyl chloride	90		-		5-195	-		66
Chloroethane	100		-		40-160	-		78
1,1-Dichloroethene	100		-		50-150	-		32
trans-1,2-Dichloroethene	105		-		70-130	-		45
cis-1,2-Dichloroethene	110		-		60-140	-		30
Trichloroethene	100		-		65-135	-		48
1,2-Dichlorobenzene	95		-		65-135	-		57
1,3-Dichlorobenzene	95		-		70-130	-		43
1,4-Dichlorobenzene	95		-		65-135	-		57
p/m-Xylene	102		-		60-140	-		30
o-xylene	100		-		60-140	-		30
Styrene	95		-		60-140	-		30
Acetone	102		-		40-160	-		30
Carbon disulfide	100		-		60-140	-		30
2-Butanone	104		-		60-140	-		30
Vinyl acetate	100		-		60-140	-		30
4-Methyl-2-pentanone	110		-		60-140	-		30
2-Hexanone	114		-		60-140	-		30
Acrolein	108		-		60-140	-		30
Acrylonitrile	100		-		60-140	-		60
Methyl tert butyl Ether	90		-		60-140	-		30
Dibromomethane	85		-		70-130	-		30
Tert-Butyl Alcohol	80		-		60-140	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

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: WG1486572-3								
Tertiary-Amyl Methyl Ether	90		-		60-140	-		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	108				60-140
Fluorobenzene	97				60-140
4-Bromofluorobenzene	94				60-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

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: WG1486572-3								
Tertiary-Amyl Methyl Ether	90		-		60-140	-		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	108				60-140
Fluorobenzene	97				60-140
4-Bromofluorobenzene	94				60-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

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: WG1487995-3								
1,4-Dioxane	**152**	Q	-		60-140	-		20

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

Matrix Spike Analysis

Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1486572-5 WG1486572-6 QC Sample: L2118775-01 Client ID: HA20-105(OW)_2021-0413												
Methylene chloride	ND	200	200	100		190	95		1-221	5		28
1,1-Dichloroethane	ND	200	200	100		200	100		59-155	0		49
Chloroform	ND	200	210	105		210	105		51-138	0		54
Carbon tetrachloride	ND	200	190	95		180	90		70-140	5		41
1,2-Dichloropropane	ND	200	200	100		200	100		1-210	0		55
Dibromochloromethane	ND	200	200	100		190	95		53-149	5		50
1,1,2-Trichloroethane	ND	200	210	105		200	100		52-150	5		45
2-Chloroethylvinyl ether	ND	200	190	95		180	90		1-305	5		71
Tetrachloroethene	ND	200	220	110		210	105		64-148	5		39
Chlorobenzene	ND	200	200	100		200	100		37-160	0		53
Trichlorofluoromethane	ND	200	200	100		190	95		17-181	5		84
1,2-Dichloroethane	ND	200	210	105		200	100		49-155	5		49
1,1,1-Trichloroethane	ND	200	200	100		200	100		52-162	0		36
Bromodichloromethane	ND	200	220	110		220	110		35-155	0		56
trans-1,3-Dichloropropene	ND	200	170	85		160	80		17-183	6		86
cis-1,3-Dichloropropene	ND	200	170	85		170	85		1-227	0		58
Bromoform	ND	200	180	90		180	90		45-169	0		42
1,1,2,2-Tetrachloroethane	ND	200	230	115		220	110		45-157	4		61
Benzene	ND	200	210	105		210	105		37-151	0		61
Toluene	ND	200	230	115		230	115		47-150	0		41
Ethylbenzene	ND	200	240	120		230	115		37-162	4		63
Chloromethane	ND	200	160	80		150	75		1-273	6		60
Bromomethane	ND	200	97	48		99	50		1-242	2		61

Matrix Spike Analysis

Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1486572-5 WG1486572-6 QC Sample: L2118775-01 Client ID: HA20-105(OW)_2021-0413												
Vinyl chloride	ND	200	180	90		170	85		1-251	6		66
Chloroethane	ND	200	190	95		180	90		14-230	5		78
1,1-Dichloroethene	ND	200	200	100		190	95		1-234	5		32
trans-1,2-Dichloroethene	ND	200	210	105		200	100		54-156	5		45
cis-1,2-Dichloroethene	ND	200	220	110		220	110		60-140	0		30
Trichloroethene	ND	200	190	95		200	100		70-157	5		48
1,2-Dichlorobenzene	ND	200	210	105		200	100		18-190	5		57
1,3-Dichlorobenzene	ND	200	200	100		200	100		59-156	0		43
1,4-Dichlorobenzene	ND	200	210	105		200	100		18-190	5		57
p/m-Xylene	ND	400	440	110		430	108		60-140	2		30
o-xylene	ND	200	220	110		210	105		60-140	5		30
Styrene	ND	200	200	100		200	100		60-140	0		30
Acetone	ND	500	490	98		490	98		40-160	0		30
Carbon disulfide	ND	200	190	95		180	90		60-140	5		30
2-Butanone	ND	500	480	96		480	96		60-140	0		30
Vinyl acetate	ND	400	360	90		360	90		60-140	0		30
4-Methyl-2-pentanone	ND	500	540	108		520	104		60-140	4		30
2-Hexanone	ND	500	570	114		550	110		60-140	4		30
Acrolein	ND	400	320	80		300	75		40-160	6		30
Acrylonitrile	ND	400	400	100		390	98		40-160	3		60
Dibromomethane	ND	200	170	85		160	80		70-130	6		30

Matrix Spike Analysis

Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits

Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1486572-5 WG1486572-6 QC Sample: L2118775-01 Client ID: HA20-105(OW)_2021-0413

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
4-Bromofluorobenzene	98		98		60-140
Fluorobenzene	94		94		60-140
Pentafluorobenzene	106		106		60-140

SEMIVOLATILES

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

SAMPLE RESULTS

Lab ID: L2118775-01
Client ID: HA20-105(OW)_2021-0413
Sample Location: SOMERVILLE, MA

Date Collected: 04/13/21 13:45
Date Received: 04/13/21
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 04/19/21 17:20
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 04/19/21 01:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/l	2.00	--	1
Benzidine[1]	ND		ug/l	20.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	5.00	--	1
Hexachlorobenzene	ND		ug/l	2.00	--	1
Bis(2-chloroethyl)ether	ND		ug/l	2.00	--	1
2-Chloronaphthalene	ND		ug/l	2.00	--	1
3,3'-Dichlorobenzidine	ND		ug/l	5.00	--	1
2,4-Dinitrotoluene	ND		ug/l	5.00	--	1
2,6-Dinitrotoluene	ND		ug/l	5.00	--	1
Azobenzene[1]	ND		ug/l	2.00	--	1
Fluoranthene	ND		ug/l	2.00	--	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.00	--	1
4-Bromophenyl phenyl ether	ND		ug/l	2.00	--	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.00	--	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.00	--	1
Hexachlorobutadiene	ND		ug/l	2.00	--	1
Hexachlorocyclopentadiene[1]	ND		ug/l	10.0	--	1
Hexachloroethane	ND		ug/l	2.00	--	1
Isophorone	ND		ug/l	5.00	--	1
Naphthalene	ND		ug/l	2.00	--	1
Nitrobenzene	ND		ug/l	2.00	--	1
NDPA/DPA[1]	ND		ug/l	2.00	--	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.00	--	1
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

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

SAMPLE RESULTS

Lab ID: L2118775-01
Client ID: HA20-105(OW)_2021-0413
Sample Location: SOMERVILLE, MA
Date Collected: 04/13/21 13:45
Date Received: 04/13/21
Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Dimethyl phthalate	ND		ug/l	5.00	--	1
Benzo(a)anthracene	ND		ug/l	2.00	--	1
Benzo(a)pyrene	ND		ug/l	2.00	--	1
Benzo(b)fluoranthene	ND		ug/l	2.00	--	1
Benzo(k)fluoranthene	ND		ug/l	2.00	--	1
Chrysene	ND		ug/l	2.00	--	1
Acenaphthylene	ND		ug/l	2.00	--	1
Anthracene	ND		ug/l	2.00	--	1
Benzo(ghi)perylene	ND		ug/l	2.00	--	1
Fluorene	ND		ug/l	2.00	--	1
Phenanthrene	ND		ug/l	2.00	--	1
Dibenzo(a,h)anthracene	ND		ug/l	2.00	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.00	--	1
Pyrene	ND		ug/l	2.00	--	1
4-Chloroaniline[1]	ND		ug/l	5.00	--	1
Dibenzofuran[1]	ND		ug/l	2.00	--	1
2-Methylnaphthalene[1]	ND		ug/l	2.00	--	1
n-Nitrosodimethylamine[1]	ND		ug/l	2.00	--	1
2,4,6-Trichlorophenol	ND		ug/l	5.00	--	1
p-Chloro-m-cresol[1]	ND		ug/l	2.00	--	1
2-Chlorophenol	ND		ug/l	2.00	--	1
2,4-Dichlorophenol	ND		ug/l	5.00	--	1
2,4-Dimethylphenol	ND		ug/l	5.00	--	1
2-Nitrophenol	ND		ug/l	5.00	--	1
4-Nitrophenol	ND		ug/l	10.0	--	1
2,4-Dinitrophenol	ND		ug/l	20.0	--	1
4,6-Dinitro-o-cresol	ND		ug/l	10.0	--	1
Pentachlorophenol	ND		ug/l	5.00	--	1
Phenol	ND		ug/l	5.00	--	1
2-Methylphenol[1]	ND		ug/l	5.00	--	1
3-Methylphenol/4-Methylphenol[1]	ND		ug/l	5.00	--	1
2,4,5-Trichlorophenol[1]	ND		ug/l	5.00	--	1
Benzoic Acid[1]	ND		ug/l	50.0	--	1
Benzyl Alcohol[1]	ND		ug/l	2.00	--	1

Project Name: 74 MIDDLESEX AVENUE
Lab Number: L2118775
Project Number: 134081-009
Report Date: 04/21/21

SAMPLE RESULTS

Lab ID: L2118775-01
Client ID: HA20-105(OW)_2021-0413
Sample Location: SOMERVILLE, MA

Date Collected: 04/13/21 13:45
Date Received: 04/13/21
Field Prep: Refer to COC

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	42		25-87
Phenol-d6	29		16-65
Nitrobenzene-d5	63		42-122
2-Fluorobiphenyl	74		46-121
2,4,6-Tribromophenol	87		45-128
4-Terphenyl-d14	83		47-138

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 04/19/21 16:34
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 04/19/21 01:54

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1487774-1					
Acenaphthene	ND		ug/l	2.00	--
Benzidine[1]	ND		ug/l	20.0	--
1,2,4-Trichlorobenzene	ND		ug/l	5.00	--
Hexachlorobenzene	ND		ug/l	2.00	--
Bis(2-chloroethyl)ether	ND		ug/l	2.00	--
2-Chloronaphthalene	ND		ug/l	2.00	--
3,3'-Dichlorobenzidine	ND		ug/l	5.00	--
2,4-Dinitrotoluene	ND		ug/l	5.00	--
2,6-Dinitrotoluene	ND		ug/l	5.00	--
Azobenzene[1]	ND		ug/l	2.00	--
Fluoranthene	ND		ug/l	2.00	--
4-Chlorophenyl phenyl ether	ND		ug/l	2.00	--
4-Bromophenyl phenyl ether	ND		ug/l	2.00	--
Bis(2-chloroisopropyl)ether	ND		ug/l	2.00	--
Bis(2-chloroethoxy)methane	ND		ug/l	5.00	--
Hexachlorobutadiene	ND		ug/l	2.00	--
Hexachlorocyclopentadiene[1]	ND		ug/l	10.0	--
Hexachloroethane	ND		ug/l	2.00	--
Isophorone	ND		ug/l	5.00	--
Naphthalene	ND		ug/l	2.00	--
Nitrobenzene	ND		ug/l	2.00	--
NDPA/DPA[1]	ND		ug/l	2.00	--
n-Nitrosodi-n-propylamine	ND		ug/l	5.00	--
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	--

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 04/19/21 16:34
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 04/19/21 01:54

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1487774-1					
Benzo(a)anthracene	ND		ug/l	2.00	--
Benzo(a)pyrene	ND		ug/l	2.00	--
Benzo(b)fluoranthene	ND		ug/l	2.00	--
Benzo(k)fluoranthene	ND		ug/l	2.00	--
Chrysene	ND		ug/l	2.00	--
Acenaphthylene	ND		ug/l	2.00	--
Anthracene	ND		ug/l	2.00	--
Benzo(ghi)perylene	ND		ug/l	2.00	--
Fluorene	ND		ug/l	2.00	--
Phenanthrene	ND		ug/l	2.00	--
Dibenzo(a,h)anthracene	ND		ug/l	2.00	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.00	--
Pyrene	ND		ug/l	2.00	--
4-Chloroaniline[1]	ND		ug/l	5.00	--
Dibenzofuran[1]	ND		ug/l	2.00	--
2-Methylnaphthalene[1]	ND		ug/l	2.00	--
n-Nitrosodimethylamine[1]	ND		ug/l	2.00	--
2,4,6-Trichlorophenol	ND		ug/l	5.00	--
p-Chloro-m-cresol[1]	ND		ug/l	2.00	--
2-Chlorophenol	ND		ug/l	2.00	--
2,4-Dichlorophenol	ND		ug/l	5.00	--
2,4-Dimethylphenol	ND		ug/l	5.00	--
2-Nitrophenol	ND		ug/l	5.00	--
4-Nitrophenol	ND		ug/l	10.0	--
2,4-Dinitrophenol	ND		ug/l	20.0	--
4,6-Dinitro-o-cresol	ND		ug/l	10.0	--
Pentachlorophenol	ND		ug/l	5.00	--
Phenol	ND		ug/l	5.00	--
2-Methylphenol[1]	ND		ug/l	5.00	--

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 04/19/21 16:34
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 04/19/21 01:54

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1487774-1					
3-Methylphenol/4-Methylphenol[1]	ND		ug/l	5.00	--
2,4,5-Trichlorophenol[1]	ND		ug/l	5.00	--
Benzoic Acid[1]	ND		ug/l	50.0	--
Benzyl Alcohol[1]	ND		ug/l	2.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	47		25-87
Phenol-d6	31		16-65
Nitrobenzene-d5	67		42-122
2-Fluorobiphenyl	74		46-121
2,4,6-Tribromophenol	74		45-128
4-Terphenyl-d14	85		47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

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: WG1487774-2								
Acenaphthene	70		-		60-132	-		48
1,2,4-Trichlorobenzene	73		-		57-130	-		50
Hexachlorobenzene	80		-		8-142	-		55
Bis(2-chloroethyl)ether	74		-		43-126	-		108
2-Chloronaphthalene	79		-		65-120	-		24
3,3'-Dichlorobenzidine	38		-		8-213	-		108
2,4-Dinitrotoluene	87		-		48-127	-		42
2,6-Dinitrotoluene	91		-		68-137	-		48
Azobenzene[1]	70		-		44-115	-		23
Fluoranthene	79		-		43-121	-		66
4-Chlorophenyl phenyl ether	79		-		38-145	-		61
4-Bromophenyl phenyl ether	82		-		65-120	-		43
Bis(2-chloroisopropyl)ether	65		-		63-139	-		76
Bis(2-chloroethoxy)methane	74		-		49-165	-		54
Hexachlorobutadiene	78		-		38-120	-		62
Hexachlorocyclopentadiene[1]	87		-		7-118	-		35
Hexachloroethane	67		-		55-120	-		52
Isophorone	72		-		47-180	-		93
Naphthalene	70		-		36-120	-		65
Nitrobenzene	73		-		54-158	-		62
NDPA/DPA[1]	78		-		45-112	-		36
n-Nitrosodi-n-propylamine	74		-		14-198	-		87
Bis(2-ethylhexyl)phthalate	90		-		29-137	-		82

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

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: WG1487774-2								
Butyl benzyl phthalate	96		-		1-140	-		60
Di-n-butylphthalate	86		-		8-120	-		47
Di-n-octylphthalate	94		-		19-132	-		69
Diethyl phthalate	81		-		1-120	-		100
Dimethyl phthalate	86		-		1-120	-		183
Benzo(a)anthracene	71		-		42-133	-		53
Benzo(a)pyrene	104		-		32-148	-		72
Benzo(b)fluoranthene	68		-		42-140	-		71
Benzo(k)fluoranthene	105		-		25-146	-		63
Chrysene	84		-		44-140	-		87
Acenaphthylene	77		-		54-126	-		74
Anthracene	79		-		43-120	-		66
Benzo(ghi)perylene	82		-		1-195	-		97
Fluorene	77		-		70-120	-		38
Phenanthrene	69		-		65-120	-		39
Dibenzo(a,h)anthracene	86		-		1-200	-		126
Indeno(1,2,3-cd)pyrene	70		-		1-151	-		99
Pyrene	79		-		70-120	-		49
4-Chloroaniline[1]	68		-		10-100	-		53
Dibenzofuran[1]	74		-		23-126	-		22
2-Methylnaphthalene[1]	75		-		40-109	-		18
n-Nitrosodimethylamine[1]	46		-		15-68	-		17
2,4,6-Trichlorophenol	90		-		52-129	-		58

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

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: WG1487774-2								
p-Chloro-m-cresol[1]	84		-		68-130	-		73
2-Chlorophenol	76		-		36-120	-		61
2,4-Dichlorophenol	86		-		53-122	-		50
2,4-Dimethylphenol	81		-		42-120	-		58
2-Nitrophenol	92		-		45-167	-		55
4-Nitrophenol	52		-		13-129	-		131
2,4-Dinitrophenol	63		-		1-173	-		132
4,6-Dinitro-o-cresol	85		-		56-130	-		203
Pentachlorophenol	79		-		38-152	-		86
Phenol	37		-		17-120	-		64
2-Methylphenol[1]	72		-		38-102	-		23
3-Methylphenol/4-Methylphenol[1]	66		-		35-103	-		26
2,4,5-Trichlorophenol[1]	97		-		47-126	-		28
Benzoic Acid[1]	19		-		2-55	-		27
Benzyl Alcohol[1]	47		-		31-103	-		23

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	53				25-87
Phenol-d6	37				16-65
Nitrobenzene-d5	76				42-122
2-Fluorobiphenyl	79				46-121
2,4,6-Tribromophenol	95				45-128
4-Terphenyl-d14	85				47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

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: WG1487774-3								
Benzidine[1]	53		-		0-70	-		30

PETROLEUM HYDROCARBONS

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

SAMPLE RESULTS

Lab ID:	L2118775-01			Date Collected:	04/13/21 13:45
Client ID:	HA20-105(OW)_2021-0413			Date Received:	04/13/21
Sample Location:	SOMERVILLE, MA			Field Prep:	Refer to COC
Sample Depth:					
Matrix:	Water			Extraction Method:	EPA 3510C
Analytical Method:	135,EPH-19-2.1			Extraction Date:	04/18/21 03:31
Analytical Date:	04/19/21 17:56	M.S. Analytical Date:	04/19/21 00:22	Cleanup Method1:	EPH-19-2.1
Analyst:	MEO	M.S. Analyst:	RP	Cleanup Date1:	04/18/21

Quality Control Information

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

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

Project Name: 74 MIDDLESEX AVENUE
Lab Number: L2118775
Project Number: 134081-009
Report Date: 04/21/21

SAMPLE RESULTS

Lab ID: L2118775-01
Client ID: HA20-105(OW)_2021-0413
Sample Location: SOMERVILLE, MA
Date Collected: 04/13/21 13:45
Date Received: 04/13/21
Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/Targets via GCMS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	51		40-140
o-Terphenyl	67		40-140
2-Fluorobiphenyl	78		40-140
2-Bromonaphthalene	76		40-140
O-Terphenyl-MS	82		40-140

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 135,EPH-19-2.1
Analytical Date: 04/19/21 16:43
Analyst: MEO
M.S. Analytical Date: 04/18/21 23:33
M.S. Analyst: RP
Extraction Method: EPA 3510C
Extraction Date: 04/18/21 03:31
Cleanup Method: EPH-19-2.1
Cleanup Date: 04/18/21

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/Targets via GCMS-SIM - Westborough Lab for sample(s): 01 Batch: WG1487618-1					
C9-C18 Aliphatics	ND		ug/l	100	--
C19-C36 Aliphatics	ND		ug/l	100	--
C11-C22 Aromatics	ND		ug/l	100	--
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--
Naphthalene	ND		ug/l	0.400	--
2-Methylnaphthalene	ND		ug/l	0.400	--
Acenaphthylene	ND		ug/l	0.400	--
Acenaphthene	ND		ug/l	0.400	--
Fluorene	ND		ug/l	0.400	--
Phenanthrene	ND		ug/l	0.400	--
Anthracene	ND		ug/l	0.400	--
Fluoranthene	ND		ug/l	0.400	--
Pyrene	ND		ug/l	0.400	--
Benzo(a)anthracene	ND		ug/l	0.400	--
Chrysene	ND		ug/l	0.400	--
Benzo(b)fluoranthene	ND		ug/l	0.400	--
Benzo(k)fluoranthene	ND		ug/l	0.400	--
Benzo(a)pyrene	ND		ug/l	0.200	--
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--
Benzo(ghi)perylene	ND		ug/l	0.400	--

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 135,EPH-19-2.1
Analytical Date: 04/19/21 16:43
Analyst: MEO
M.S. Analytical Date: 04/18/21 23:33
M.S. Analyst: RP
Extraction Method: EPA 3510C
Extraction Date: 04/18/21 03:31
Cleanup Method: EPH-19-2.1
Cleanup Date: 04/18/21

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/Targets via GCMS-SIM - Westborough Lab for sample(s): 01 Batch: WG1487618-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	65		40-140
o-Terphenyl	68		40-140
2-Fluorobiphenyl	72		40-140
2-Bromonaphthalene	74		40-140
O-Terphenyl-MS	72		40-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/Targets via GCMS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1487618-2 WG1487618-3								
C9-C18 Aliphatics	52		54		40-140	4		25
C19-C36 Aliphatics	72		73		40-140	1		25
C11-C22 Aromatics	68		74		40-140	8		25
Naphthalene	70		76		40-140	8		25
2-Methylnaphthalene	77		86		40-140	11		25
Acenaphthylene	72		82		40-140	13		25
Acenaphthene	76		84		40-140	10		25
Fluorene	75		81		40-140	8		25
Phenanthrene	80		84		40-140	5		25
Anthracene	81		86		40-140	6		25
Fluoranthene	84		88		40-140	5		25
Pyrene	88		91		40-140	3		25
Benzo(a)anthracene	79		83		40-140	5		25
Chrysene	86		90		40-140	5		25
Benzo(b)fluoranthene	94		100		40-140	6		25
Benzo(k)fluoranthene	75		74		40-140	1		25
Benzo(a)pyrene	87		90		40-140	3		25
Indeno(1,2,3-cd)Pyrene	79		80		40-140	1		25
Dibenzo(a,h)anthracene	82		84		40-140	2		25
Benzo(ghi)perylene	78		79		40-140	1		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/Targets via GCMS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1487618-2 WG1487618-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	62		61		40-140
o-Terphenyl	67		72		40-140
2-Fluorobiphenyl	68		76		40-140
2-Bromonaphthalene	69		77		40-140
O-Terphenyl-MS	83		96		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

PCBS

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

SAMPLE RESULTS

Lab ID: L2118775-01
Client ID: HA20-105(OW)_2021-0413
Sample Location: SOMERVILLE, MA

Date Collected: 04/13/21 13:45
Date Received: 04/13/21
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 04/18/21 18:44
Analyst: AWS

Extraction Method: EPA 608.3
Extraction Date: 04/18/21 01:31
Cleanup Method: EPA 3665A
Cleanup Date: 04/18/21
Cleanup Method: EPA 3660B
Cleanup Date: 04/18/21

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	54		37-123	B
Decachlorobiphenyl	49		38-114	B
2,4,5,6-Tetrachloro-m-xylene	48		37-123	A
Decachlorobiphenyl	**37**	Q	38-114	A

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 127,608.3
Analytical Date: 04/18/21 13:29
Analyst: CW

Extraction Method: EPA 608.3
Extraction Date: 04/17/21 02:32
Cleanup Method: EPA 3665A
Cleanup Date: 04/17/21
Cleanup Method: EPA 3660B
Cleanup Date: 04/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG1487409-1						
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	87		37-123	B
Decachlorobiphenyl	83		38-114	B
2,4,5,6-Tetrachloro-m-xylene	89		37-123	A
Decachlorobiphenyl	69		38-114	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

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: WG1487409-2									
Aroclor 1016	74		-		50-140	-		36	A
Aroclor 1260	79		-		8-140	-		38	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78				37-123	B
Decachlorobiphenyl	84				38-114	B
2,4,5,6-Tetrachloro-m-xylene	76				37-123	A
Decachlorobiphenyl	67				38-114	A

PESTICIDES

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

SAMPLE RESULTS

Lab ID: L2118775-01
Client ID: HA20-105(OW)_2021-0413
Sample Location: SOMERVILLE, MA

Date Collected: 04/13/21 13:45
Date Received: 04/13/21
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 04/20/21 19:00
Analyst: EJL

Extraction Method: EPA 608.3
Extraction Date: 04/19/21 01:35
Cleanup Method: EPA 3620B
Cleanup Date: 04/19/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.020	--	1	A
Lindane	ND		ug/l	0.020	--	1	A
Alpha-BHC	ND		ug/l	0.020	--	1	A
Beta-BHC	ND		ug/l	0.020	--	1	A
Heptachlor	ND		ug/l	0.020	--	1	A
Aldrin	ND		ug/l	0.020	--	1	A
Heptachlor epoxide	ND		ug/l	0.020	--	1	A
Endrin	ND		ug/l	0.040	--	1	A
Endrin aldehyde	ND		ug/l	0.040	--	1	A
Endrin ketone[1]	ND		ug/l	0.040	--	1	A
Dieldrin	ND		ug/l	0.040	--	1	A
4,4'-DDE	ND		ug/l	0.040	--	1	A
4,4'-DDD	ND		ug/l	0.040	--	1	A
4,4'-DDT	ND		ug/l	0.040	--	1	A
Endosulfan I	ND		ug/l	0.020	--	1	A
Endosulfan II	ND		ug/l	0.040	--	1	A
Endosulfan sulfate	ND		ug/l	0.040	--	1	A
Methoxychlor[1]	ND		ug/l	0.100	--	1	A
Toxaphene	ND		ug/l	0.400	--	1	A
Chlordane	ND		ug/l	0.200	--	1	A
cis-Chlordane[1]	ND		ug/l	0.020	--	1	A
trans-Chlordane[1]	ND		ug/l	0.020	--	1	A

Project Name: 74 MIDDLESEX AVENUE
Lab Number: L2118775
Project Number: 134081-009
Report Date: 04/21/21

SAMPLE RESULTS

Lab ID: L2118775-01
Client ID: HA20-105(OW)_2021-0413
Sample Location: SOMERVILLE, MA

Date Collected: 04/13/21 13:45
Date Received: 04/13/21
Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	76		47-124	A
Decachlorobiphenyl	63		32-167	A
2,4,5,6-Tetrachloro-m-xylene	77		47-124	B
Decachlorobiphenyl	78		32-167	B

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 127,608.3
Analytical Date: 04/20/21 19:44
Analyst: EJL

Extraction Method: EPA 608.3
Extraction Date: 04/19/21 01:35
Cleanup Method: EPA 3620B
Cleanup Date: 04/19/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01 Batch: WG1487772-1						
Delta-BHC	ND		ug/l	0.020	--	A
Lindane	ND		ug/l	0.020	--	A
Alpha-BHC	ND		ug/l	0.020	--	A
Beta-BHC	ND		ug/l	0.020	--	A
Heptachlor	ND		ug/l	0.020	--	A
Aldrin	ND		ug/l	0.020	--	A
Heptachlor epoxide	ND		ug/l	0.020	--	A
Endrin	ND		ug/l	0.040	--	A
Endrin aldehyde	ND		ug/l	0.040	--	A
Endrin ketone[1]	ND		ug/l	0.040	--	A
Dieldrin	ND		ug/l	0.040	--	A
4,4'-DDE	ND		ug/l	0.040	--	A
4,4'-DDD	ND		ug/l	0.040	--	A
4,4'-DDT	ND		ug/l	0.040	--	A
Endosulfan I	ND		ug/l	0.020	--	A
Endosulfan II	ND		ug/l	0.040	--	A
Endosulfan sulfate	ND		ug/l	0.040	--	A
Methoxychlor[1]	ND		ug/l	0.100	--	A
Toxaphene	ND		ug/l	0.400	--	A
Chlordane	ND		ug/l	0.200	--	A
cis-Chlordane[1]	ND		ug/l	0.020	--	A
trans-Chlordane[1]	ND		ug/l	0.020	--	A

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 127,608.3
Analytical Date: 04/20/21 19:44
Analyst: EJL

Extraction Method: EPA 608.3
Extraction Date: 04/19/21 01:35
Cleanup Method: EPA 3620B
Cleanup Date: 04/19/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01 Batch: WG1487772-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81		47-124	A
Decachlorobiphenyl	58		32-167	A
2,4,5,6-Tetrachloro-m-xylene	75		47-124	B
Decachlorobiphenyl	77		32-167	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01 Batch: WG1487772-2									
Delta-BHC	84		-		19-140	-		52	A
Lindane	83		-		32-140	-		39	A
Alpha-BHC	89		-		37-140	-		36	A
Beta-BHC	96		-		17-147	-		44	A
Heptachlor	77		-		34-140	-		43	A
Aldrin	78		-		42-140	-		35	A
Heptachlor epoxide	79		-		37-142	-		26	A
Endrin	76		-		30-147	-		48	A
Endrin aldehyde	66		-		30-150	-		30	A
Endrin ketone[1]	86		-		30-150	-		30	A
Dieldrin	77		-		36-146	-		49	A
4,4'-DDE	72		-		30-145	-		35	A
4,4'-DDD	80		-		31-141	-		39	A
4,4'-DDT	85		-		25-160	-		42	A
Endosulfan I	78		-		45-153	-		28	A
Endosulfan II	87		-		1-202	-		53	A
Endosulfan sulfate	81		-		26-144	-		38	A
Methoxychlor[1]	89		-		30-150	-		30	A
cis-Chlordane[1]	80		-		45-140	-		35	A
trans-Chlordane[1]	82		-		45-140	-		35	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01 Batch: WG1487772-2

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78				47-124	A
Decachlorobiphenyl	66				32-167	A
2,4,5,6-Tetrachloro-m-xylene	75				47-124	B
Decachlorobiphenyl	82				32-167	B

METALS

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

SAMPLE RESULTS

Lab ID: L2118775-01
Client ID: HA20-105(OW)_2021-0413
Sample Location: SOMERVILLE, MA
Date Collected: 04/13/21 13:45
Date Received: 04/13/21
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	04/15/21 00:56	04/16/21 15:22	EPA 3005A	3,200.8	CD
Arsenic, Total	ND		mg/l	0.00100	--	1	04/15/21 00:56	04/16/21 15:22	EPA 3005A	3,200.8	CD
Cadmium, Total	ND		mg/l	0.00020	--	1	04/15/21 00:56	04/16/21 15:22	EPA 3005A	3,200.8	CD
Chromium, Total	ND		mg/l	0.00100	--	1	04/15/21 00:56	04/16/21 15:22	EPA 3005A	3,200.8	CD
Copper, Total	0.00130		mg/l	0.00100	--	1	04/15/21 00:56	04/16/21 15:22	EPA 3005A	3,200.8	CD
Iron, Total	25.6		mg/l	0.050	--	1	04/15/21 00:56	04/16/21 22:39	EPA 3005A	19,200.7	SV
Lead, Total	0.00290		mg/l	0.00100	--	1	04/15/21 00:56	04/16/21 15:22	EPA 3005A	3,200.8	CD
Mercury, Total	ND		mg/l	0.00020	--	1	04/15/21 03:55	04/15/21 19:08	EPA 245.1	3,245.1	OU
Nickel, Total	ND		mg/l	0.00200	--	1	04/15/21 00:56	04/16/21 15:22	EPA 3005A	3,200.8	CD
Selenium, Total	ND		mg/l	0.00500	--	1	04/15/21 00:56	04/16/21 15:22	EPA 3005A	3,200.8	CD
Silver, Total	ND		mg/l	0.00040	--	1	04/15/21 00:56	04/16/21 15:22	EPA 3005A	3,200.8	CD
Zinc, Total	0.01980		mg/l	0.01000	--	1	04/15/21 00:56	04/16/21 15:22	EPA 3005A	3,200.8	CD

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

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 Batch: WG1485744-1										
Mercury, Total	ND		mg/l	0.00020	--	1	04/15/21 03:55	04/15/21 17:47	3,245.1	OU

Prep Information

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1486389-1										
Iron, Total	ND		mg/l	0.050	--	1	04/15/21 00:56	04/16/21 20:20	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 Metals - Mansfield Lab for sample(s): 01 Batch: WG1486782-1										
Antimony, Total	ND		mg/l	0.00400	--	1	04/15/21 00:56	04/16/21 14:07	3,200.8	CD
Arsenic, Total	ND		mg/l	0.00100	--	1	04/15/21 00:56	04/16/21 14:07	3,200.8	CD
Cadmium, Total	ND		mg/l	0.00020	--	1	04/15/21 00:56	04/16/21 14:07	3,200.8	CD
Chromium, Total	ND		mg/l	0.00100	--	1	04/15/21 00:56	04/16/21 14:07	3,200.8	CD
Copper, Total	ND		mg/l	0.00100	--	1	04/15/21 00:56	04/16/21 14:07	3,200.8	CD
Lead, Total	ND		mg/l	0.00100	--	1	04/15/21 00:56	04/16/21 14:07	3,200.8	CD
Nickel, Total	ND		mg/l	0.00200	--	1	04/15/21 00:56	04/16/21 14:07	3,200.8	CD
Selenium, Total	ND		mg/l	0.00500	--	1	04/15/21 00:56	04/16/21 14:07	3,200.8	CD
Silver, Total	ND		mg/l	0.00040	--	1	04/15/21 00:56	04/16/21 14:07	3,200.8	CD
Zinc, Total	ND		mg/l	0.01000	--	1	04/15/21 00:56	04/16/21 14:07	3,200.8	CD

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1485744-2								
Mercury, Total	113		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1486389-2								
Iron, Total	100		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1486782-2								
Antimony, Total	89		-		85-115	-		
Arsenic, Total	105		-		85-115	-		
Cadmium, Total	105		-		85-115	-		
Chromium, Total	105		-		85-115	-		
Copper, Total	104		-		85-115	-		
Lead, Total	100		-		85-115	-		
Nickel, Total	100		-		85-115	-		
Selenium, Total	100		-		85-115	-		
Silver, Total	101		-		85-115	-		
Zinc, Total	110		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

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 QC Batch ID: WG1485744-3 QC Sample: L2118457-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00537	107		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1485744-5 QC Sample: L2118671-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00596	119		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1486389-3 QC Sample: L2117615-01 Client ID: MS Sample												
Iron, Total	1.09	1	2.05	96		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1486389-7 QC Sample: L2117615-02 Client ID: MS Sample												
Iron, Total	0.516	1	1.51	99		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1486782-3 QC Sample: L2100009-244 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.4852	97		-	-		70-130	-		20
Arsenic, Total	0.01705	0.12	0.1416	104		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.05432	106		-	-		70-130	-		20
Chromium, Total	0.1592	0.2	0.3578	99		-	-		70-130	-		20
Copper, Total	0.4201	0.25	0.6659	98		-	-		70-130	-		20
Lead, Total	0.05835	0.51	0.5865	104		-	-		70-130	-		20
Nickel, Total	0.08199	0.5	0.5759	99		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1215	101		-	-		70-130	-		20
Silver, Total	ND	0.05	0.05164	103		-	-		70-130	-		20
Zinc, Total	0.2142	0.5	0.6837	94		-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1485744-4 QC Sample: L2118457-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1485744-6 QC Sample: L2118671-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1486782-4 QC Sample: L2100009-244 Client ID: DUP Sample						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	0.01705	0.01617	mg/l	5		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	0.1592	0.1604	mg/l	1		20
Copper, Total	0.4201	0.4065	mg/l	3		20
Lead, Total	0.05835	0.05953	mg/l	2		20
Nickel, Total	0.08199	0.07934	mg/l	3		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.2142	0.1372	mg/l	**44**	Q	20

INORGANICS
&
MISCELLANEOUS

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

SAMPLE RESULTS

Lab ID: L2118775-01
Client ID: HA20-105(OW)_2021-0413
Sample Location: SOMERVILLE, MA
Sample Depth:
Matrix: Water

Date Collected: 04/13/21 13:45
Date Received: 04/13/21
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	6.6		SU	-	NA	1	-	04/14/21 17:44	121,4500H+-B	AS
Oil & Grease, Hem-Grav	ND		mg/l	3.6	--	.9	04/16/21 19:30	04/16/21 22:30	74,1664A	IR

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2118775
Report Date: 04/21/21

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: WG1487349-1										
Oil & Grease, Hem-Grav	ND		mg/l	4.0	--	1	04/16/21 19:30	04/16/21 22:30	74,1664A	IR

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1486291-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1487349-2								
Oil & Grease, Hem-Grav	87		-		78-114	-		18

Matrix Spike Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

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: WG1487349-4 QC Sample: L2118059-19 Client ID: MS Sample												
Oil & Grease, Hem-Grav	ND	41.2	35	86		-	-		78-114	-		18

Lab Duplicate Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1486291-2 QC Sample: L2118574-01 Client ID: DUP Sample						
pH	8.7	8.7	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1487349-3 QC Sample: L2118059-10 Client ID: DUP Sample						
Oil & Grease, Hem-Grav	ND	ND	mg/l	NC		18

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2118775
Report Date: 04/21/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2118775-01A	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		624.1-MWRA(3),624.1-SIM-RGP(7)
L2118775-01B	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		624.1-MWRA(3),624.1-SIM-RGP(7)
L2118775-01C	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		624.1-MWRA(3),624.1-SIM-RGP(7)
L2118775-01D	Plastic 250ml HNO3 preserved	B	<2	<2	2.2	Y	Absent		HOLD-METAL-DISSOLVED(180)
L2118775-01E	Plastic 250ml HNO3 preserved	B	<2	<2	2.2	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),FE-UI(180),CU-2008T(180),AS-2008T(180),AG-2008T(180),HG-U(28),SE-2008T(180),SB-2008T(180),CR-2008T(180),PB-2008T(180)
L2118775-01F	Plastic 250ml unpreserved	B	7	7	2.2	Y	Absent		PH-4500(.01)
L2118775-01G	Amber 1000ml Na2S2O3	B	7	7	2.2	Y	Absent		PESTICIDE-608.3(7),PCB-608.3(365)
L2118775-01H	Amber 1000ml Na2S2O3	B	7	7	2.2	Y	Absent		PESTICIDE-608.3(7),PCB-608.3(365)
L2118775-01I	Amber 1000ml Na2S2O3	B	7	7	2.2	Y	Absent		PESTICIDE-608.3(7),PCB-608.3(365)
L2118775-01J	Amber 1000ml Na2S2O3	B	7	7	2.2	Y	Absent		625.1(7)
L2118775-01K	Amber 1000ml Na2S2O3	B	7	7	2.2	Y	Absent		625.1(7)
L2118775-01L	Amber 1000ml Na2S2O3	B	7	7	2.2	Y	Absent		625.1(7)
L2118775-01M	Amber 1000ml HCl preserved	B	<2	<2	2.2	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2118775-01N	Amber 1000ml HCl preserved	B	<2	<2	2.2	Y	Absent		EPHD-GC-20(14),EPH-MS-20(14)
L2118775-01O	Amber 1000ml HCl preserved	B	NA		2.2	Y	Absent		OG-1664(28)
L2118775-01P	Amber 1000ml HCl preserved	B	NA		2.2	Y	Absent		OG-1664(28)

*Values in parentheses indicate holding time in days

Project Name:	74 MIDDLESEX AVENUE	**Lab Number:**	L2118775
Project Number:	134081-009	**Report Date:**	04/21/21

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.

Report Format: Data Usability Report

Project Name:	74 MIDDLESEX AVENUE	**Lab Number:**	L2118775
Project Number:	134081-009	**Report Date:**	04/21/21

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 at or above the RL for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. (Note: 'PFAS, Total (6)' is applicable to MassDEP DW compliance analysis only.). 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

Report Format: Data Usability Report

Project Name:	74 MIDDLESEX AVENUE	**Lab Number:**	L2118775
Project Number:	134081-009	**Report Date:**	04/21/21

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.

Report Format: Data Usability Report

Project Name:	74 MIDDLESEX AVENUE	**Lab Number:**	L2118775
Project Number:	134081-009	**Report Date:**	04/21/21

REFERENCES

3	Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.
19	Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
74	Method 1664,Revision A: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, EPA-821-R-98-002, February 1999.
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.
135	Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, December 2019, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, March 1, 2020.

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

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Brewer, ME 04412 — Portsmouth, NH 03801 — Mahwah, NJ 07430
Albany, NY 12205
Tonawanda, NY 14150 — Holmes, PA 19043

Page 1 of 1

Date Rec'd in Lab: 4/13/21

ALPHA Job #: L2118775

H&A Information

H&A Client:	Greystar
H&A Address:	465 Medford Street
	Boston, MA 02129
H&A Phone:	617-886-5365
H&A Fax:	-
H&A Email:	hballantyne/kingraham

Project Information

Project Name:	74 Middlesex Avenue
Project Location:	Somerville, MA
Project #:	134081-009
(Use Project name as Project #)	☐
Project Manager:	Heather Ballantyne/Denis Bell
ALPHAQuote #:	

Turn-Around Time

Standard ☑ — Due Date:
Rush (only if pre approved) ☐ — # of Days: 5 Day

Deliverables

☑ Email ☐ Fax
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other:

Billing Information

☐ Same as Client Info
PO #

Regulatory Requirements (Program/Criteria)

MA MWRA

Note: Select State from menu & identify criteria

Disposal Site Information

Please identify below location of applicable disposal facilities.

Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

1. Total Metals - Run Cd, Cr, Cu, Pb, Ni, Ag, Zn, As, Se, Sb by 200.7, Hg by 245.1
2. PHC; EPH carbon ranges and PAH analytes (by MADEP EPH)

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☑ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	1. TTO VOCs (624)	2. TTO ABNs (625)	3. TTO PCBs (608)	4. TTO Pesticides (608)	5. PHC (note 2)	6. pH (150.1)	7. Total & Dissolved Metals (note 1)	8. Fats, Oil, Grease (1664)	Sample Specific Comments	Total Bottles
18775 -01	HA20-105(OW)_2021-0413	4/13/2021	13:45	AQ	NTL	X	X	X	X	X	X	X	X	HOLD Dissolved Metals	16
Container Type						V	A	A	A	A	A	P	A		
Preservative						H	H	H	H	B	A	C	B		

Preservative Code: A = None; B = HCl; C = HNO_3; D = H_2SO_4; E = NaOH; F = MeOH; G = $NaHSO_4$; H = $Na_2S_2O_3$; K/E = Zn Ac/NaOH; O = Other

Container Code: P = Plastic; A = Amber Glass; V = Vial; G = Glass; B = Bacteria Cup; C = Cube; O = Other; E = Encore; D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	4.13.21 16:15	Plum Mail	4/13/21 1635
	4/13/21 1804		4/13/21 1804

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. Alpha Analytical's services under this Chain of Custody shall be performed in accordance with terms and conditions within Blanket Service Agreement# 2015-16-Alpha Analytical by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and Alpha Analytical.

Document ID: 20455 Rev 1 (1/28/2016)

ANALYTICAL REPORT

Lab Number:	L2120709
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Heather Ballantyne
Phone:	(617) 886-3061
Project Name:	74 MIDDLESEX AVENUE
Project Number:	134081-009
Report Date:	05/05/21

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: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2120709
Report Date: 05/05/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2120709-01	HA20-105(OW)_2021-0422	WATER	SOMERVILLE, MA	04/22/21 10:40	04/22/21
L2120709-02	MYSTIC-1_2021-0422	WATER	SOMERVILLE, MA	04/22/21 12:40	04/22/21

Project Name:	74 MIDDLESEX AVENUE	**Lab Number:**	L2120709
Project Number:	134081-009	**Report Date:**	05/05/21

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: 74 MIDDLESEX AVENUE **Lab Number:** L2120709
Project Number: 134081-009 **Report Date:** 05/05/21

Case Narrative (continued)

Report Submission

May 05, 2021: This final report includes the results of all requested analyses.

April 29, 2021: This is a preliminary report.

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

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

Sample Receipt

The analyses performed were specified by the client.

L2120709-01: The sample was received above the appropriate pH for the Ammonia Nitrogen - SM 4500 analysis. The laboratory added additional H2SO4 to a pH <2.

Total Metals

L2120709-01 and -02: The sample has elevated detection limits for all elements analyzed by Method 200.8 due to the dilution required by the high concentrations of target and non-target elements.

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: Tiffani Morrissey - Tiffani Morrissey

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

ORGANICS

VOLATILES

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2120709
Report Date: 05/05/21

SAMPLE RESULTS

Lab ID: L2120709-01
Client ID: HA20-105(OW)_2021-0422
Sample Location: SOMERVILLE, MA

Date Collected: 04/22/21 10:40
Date Received: 04/22/21
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 04/24/21 10:04
Analyst: MKS

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	2.0		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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	104		60-140
Fluorobenzene	98		60-140
4-Bromofluorobenzene	92		60-140

Project Name: 74 MIDDLESEX AVENUE
Lab Number: L2120709
Project Number: 134081-009
Report Date: 05/05/21

SAMPLE RESULTS

Lab ID: L2120709-01
Client ID: HA20-105(OW)_2021-0422
Sample Location: SOMERVILLE, MA

Date Collected: 04/22/21 10:40
Date Received: 04/22/21
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 04/26/21 16:21
Analyst: AMM

Extraction Method: EPA 504.1
Extraction Date: 04/26/21 14:00

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

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2120709
Report Date: 05/05/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 04/24/21 08:49
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1490307-10					
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: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2120709
Report Date: 05/05/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 04/24/21 08:49
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1490307-10					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	103		60-140
Fluorobenzene	92		60-140
4-Bromofluorobenzene	92		60-140

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2120709
Report Date: 05/05/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 04/26/21 15:13
Analyst: AMM

Extraction Method: EPA 504.1
Extraction Date: 04/26/21 14:00

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG1490827-1						
1,2-Dibromoethane	ND		ug/l	0.010	--	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2120709
Report Date: 05/05/21

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: WG1490307-9								
Methylene chloride	85		-		60-140	-		28
1,1-Dichloroethane	90		-		50-150	-		49
Carbon tetrachloride	85		-		70-130	-		41
1,1,2-Trichloroethane	105		-		70-130	-		45
Tetrachloroethene	105		-		70-130	-		39
1,2-Dichloroethane	95		-		70-130	-		49
1,1,1-Trichloroethane	90		-		70-130	-		36
Benzene	90		-		65-135	-		61
Toluene	110		-		70-130	-		41
Ethylbenzene	100		-		60-140	-		63
Vinyl chloride	75		-		5-195	-		66
1,1-Dichloroethene	85		-		50-150	-		32
cis-1,2-Dichloroethene	95		-		60-140	-		30
Trichloroethene	85		-		65-135	-		48
1,2-Dichlorobenzene	100		-		65-135	-		57
1,3-Dichlorobenzene	95		-		70-130	-		43
1,4-Dichlorobenzene	95		-		65-135	-		57
p/m-Xylene	92		-		60-140	-		30
o-xylene	90		-		60-140	-		30
Acetone	124		-		40-160	-		30
Methyl tert butyl ether	80		-		60-140	-		30
Tert-Butyl Alcohol	120		-		60-140	-		30
Tertiary-Amyl Methyl Ether	75		-		60-140	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2120709
Report Date: 05/05/21

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: WG1490307-9								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	108				60-140
Fluorobenzene	94				60-140
4-Bromofluorobenzene	93				60-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2120709
Report Date: 05/05/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 Batch: WG1490827-2									
1,2-Dibromoethane	99		-		80-120	-			A

Matrix Spike Analysis

Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE

Project Number: 134081-009

Lab Number: L2120709

Report Date: 05/05/21

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: WG1490827-3 QC Sample: L2120215-01 Client ID: MS Sample													
1,2-Dibromoethane	ND	0.25	0.216	86		-	-		80-120	-		20	A
1,2-Dibromo-3-chloropropane	ND	0.25	0.257	103		-	-		80-120	-		20	A
1,2,3-Trichloropropane	ND	0.25	0.295	118		-	-		80-120	-		20	A

SEMIVOLATILES

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2120709
Report Date: 05/05/21

SAMPLE RESULTS

Lab ID: L2120709-01
Client ID: HA20-105(OW)_2021-0422
Sample Location: SOMERVILLE, MA

Date Collected: 04/22/21 10:40
Date Received: 04/22/21
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1-SIM
Analytical Date: 04/27/21 16:02
Analyst: DV

Extraction Method: EPA 625.1
Extraction Date: 04/26/21 00:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		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	ND		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	50		25-87
Phenol-d6	35		16-65
Nitrobenzene-d5	95		42-122
2-Fluorobiphenyl	87		46-121
2,4,6-Tribromophenol	100		45-128
4-Terphenyl-d14	87		47-138

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2120709
Report Date: 05/05/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1-SIM
Analytical Date: 04/26/21 16:15
Analyst: RP

Extraction Method: EPA 625.1
Extraction Date: 04/26/21 00:38

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1490539-1					
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	42		25-87
Phenol-d6	29		16-65
Nitrobenzene-d5	74		42-122
2-Fluorobiphenyl	76		46-121
2,4,6-Tribromophenol	91		45-128
4-Terphenyl-d14	68		47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2120709
Report Date: 05/05/21

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: WG1490539-3								
Acenaphthene	85		-		60-132	-		30
Fluoranthene	93		-		43-121	-		30
Naphthalene	81		-		36-120	-		30
Benzo(a)anthracene	95		-		42-133	-		30
Benzo(a)pyrene	101		-		32-148	-		30
Benzo(b)fluoranthene	98		-		42-140	-		30
Benzo(k)fluoranthene	94		-		25-146	-		30
Chrysene	93		-		44-140	-		30
Acenaphthylene	91		-		54-126	-		30
Anthracene	91		-		43-120	-		30
Benzo(ghi)perylene	98		-		1-195	-		30
Fluorene	86		-		70-120	-		30
Phenanthrene	87		-		65-120	-		30
Dibenzo(a,h)anthracene	101		-		1-200	-		30
Indeno(1,2,3-cd)pyrene	106		-		1-151	-		30
Pyrene	93		-		70-120	-		30
Pentachlorophenol	111		-		38-152	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2120709
Report Date: 05/05/21

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: WG1490539-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	52				25-87
Phenol-d6	36				16-65
Nitrobenzene-d5	93				42-122
2-Fluorobiphenyl	82				46-121
2,4,6-Tribromophenol	112				45-128
4-Terphenyl-d14	77				47-138

METALS

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2120709
Report Date: 05/05/21

SAMPLE RESULTS

Lab ID: L2120709-01
Client ID: HA20-105(OW)_2021-0422
Sample Location: SOMERVILLE, MA
Date Collected: 04/22/21 10:40
Date Received: 04/22/21
Field Prep: None

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											
Chromium, Total	ND		mg/l	0.00500	--	5	04/27/21 09:20	04/27/21 19:37	EPA 3005A	3,200.8	CD
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	284		mg/l	0.660	NA	1	04/27/21 09:20	04/30/21 14:13	EPA 3005A	19,200.7	SV
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		04/27/21 19:37	NA	107,-	

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2120709
Report Date: 05/05/21

SAMPLE RESULTS

Lab ID: L2120709-02
Client ID: MYSTIC-1_2021-0422
Sample Location: SOMERVILLE, MA
Date Collected: 04/22/21 12:40
Date Received: 04/22/21
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.02000	--	5	04/27/21 09:20	04/27/21 21:58	EPA 3005A	3,200.8	CD
Arsenic, Total	ND		mg/l	0.00500	--	5	04/27/21 09:20	04/27/21 21:58	EPA 3005A	3,200.8	CD
Cadmium, Total	ND		mg/l	0.00100	--	5	04/27/21 09:20	04/27/21 21:58	EPA 3005A	3,200.8	CD
Chromium, Total	ND		mg/l	0.00500	--	5	04/27/21 09:20	04/27/21 21:58	EPA 3005A	3,200.8	CD
Copper, Total	ND		mg/l	0.00500	--	5	04/27/21 09:20	04/27/21 21:58	EPA 3005A	3,200.8	CD
Iron, Total	0.442		mg/l	0.050	--	1	04/27/21 09:20	04/27/21 13:13	EPA 3005A	19,200.7	GD
Lead, Total	ND		mg/l	0.00500	--	5	04/27/21 09:20	04/27/21 21:58	EPA 3005A	3,200.8	CD
Mercury, Total	ND		mg/l	0.00020	--	1	04/27/21 09:25	04/27/21 20:12	EPA 245.1	3,245.1	OU
Nickel, Total	ND		mg/l	0.01000	--	5	04/27/21 09:20	04/27/21 21:58	EPA 3005A	3,200.8	CD
Selenium, Total	ND		mg/l	0.02500	--	5	04/27/21 09:20	04/27/21 21:58	EPA 3005A	3,200.8	CD
Silver, Total	ND		mg/l	0.00200	--	5	04/27/21 09:20	04/27/21 21:58	EPA 3005A	3,200.8	CD
Zinc, Total	ND		mg/l	0.05000	--	5	04/27/21 09:20	04/27/21 21:58	EPA 3005A	3,200.8	CD
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	1650		mg/l	0.660	NA	1	04/27/21 09:20	04/27/21 13:13	EPA 3005A	19,200.7	GD

Project Name: 74 MIDDLESEX AVENUE **Lab Number:** L2120709

Project Number: 134081-009 **Report Date:** 05/05/21

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: WG1490003-1										
Antimony, Total	ND		mg/l	0.00400	--	1	04/27/21 09:20	04/27/21 18:56	3,200.8	CD
Arsenic, Total	ND		mg/l	0.00100	--	1	04/27/21 09:20	04/27/21 18:56	3,200.8	CD
Cadmium, Total	ND		mg/l	0.00020	--	1	04/27/21 09:20	04/27/21 18:56	3,200.8	CD
Chromium, Total	ND		mg/l	0.00100	--	1	04/27/21 09:20	04/27/21 18:56	3,200.8	CD
Copper, Total	ND		mg/l	0.00100	--	1	04/27/21 09:20	04/27/21 18:56	3,200.8	CD
Lead, Total	ND		mg/l	0.00100	--	1	04/27/21 09:20	04/27/21 18:56	3,200.8	CD
Nickel, Total	ND		mg/l	0.00200	--	1	04/27/21 09:20	04/27/21 18:56	3,200.8	CD
Selenium, Total	ND		mg/l	0.00500	--	1	04/27/21 09:20	04/27/21 18:56	3,200.8	CD
Silver, Total	ND		mg/l	0.00040	--	1	04/27/21 09:20	04/27/21 18:56	3,200.8	CD
Zinc, Total	ND		mg/l	0.01000	--	1	04/27/21 09:20	04/27/21 18:56	3,200.8	CD

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: WG1490008-1										
Iron, Total	ND		mg/l	0.050	--	1	04/27/21 09:20	04/27/21 12:48	19,200.7	GD

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: WG1490008-1										
Hardness	ND		mg/l	0.660	NA	1	04/27/21 09:20	04/27/21 12:48	19,200.7	GD

Prep Information

Digestion Method: EPA 3005A

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2120709
Report Date: 05/05/21

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): 02 Batch: WG1490011-1										
Mercury, Total	ND		mg/l	0.00020	--	1	04/27/21 09:25	04/27/21 18:56	3,245.1	OU

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2120709
Report Date: 05/05/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1490003-2								
Antimony, Total	91		-		85-115	-		
Arsenic, Total	104		-		85-115	-		
Cadmium, Total	104		-		85-115	-		
Chromium, Total	103		-		85-115	-		
Copper, Total	102		-		85-115	-		
Lead, Total	103		-		85-115	-		
Nickel, Total	96		-		85-115	-		
Selenium, Total	102		-		85-115	-		
Silver, Total	100		-		85-115	-		
Zinc, Total	108		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1490008-2								
Iron, Total	94		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 Batch: WG1490008-2								
Hardness	100		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 02 Batch: WG1490011-2								
Mercury, Total	95		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2120709
Report Date: 05/05/21

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: WG1490003-3 QC Sample: L2120709-02 Client ID: MYSTIC-1_2021-0422												
Antimony, Total	ND	0.5	0.5466	109		-	-		70-130	-		20
Arsenic, Total	ND	0.12	0.1215	101		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.05237	103		-	-		70-130	-		20
Chromium, Total	ND	0.2	0.1832	92		-	-		70-130	-		20
Copper, Total	ND	0.25	0.2555	102		-	-		70-130	-		20
Lead, Total	ND	0.51	0.5730	112		-	-		70-130	-		20
Nickel, Total	ND	0.5	0.4866	97		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.09134	76		-	-		70-130	-		20
Silver, Total	ND	0.05	0.04425	88		-	-		70-130	-		20
Zinc, Total	ND	0.5	0.5008	100		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1490008-3 QC Sample: L2120709-02 Client ID: MYSTIC-1_2021-0422												
Iron, Total	0.442	1	1.36	92		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1490008-3 QC Sample: L2120709-02 Client ID: MYSTIC-1_2021-0422												
Hardness	1650	66.2	1720	106		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1490008-7 QC Sample: L2120724-01 Client ID: MS Sample												
Iron, Total	2.95	1	3.92	97		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1490008-7 QC Sample: L2120724-01 Client ID: MS Sample												
Hardness	237	66.2	303	100		-	-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2120709
Report Date: 05/05/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1490011-3 QC Sample: L2120441-01 Client ID: MS Sample									
Mercury, Total	ND	0.005	0.00468	94	-	-	70-130	-	20
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1490011-5 QC Sample: L2120447-01 Client ID: MS Sample									
Mercury, Total	ND	0.005	0.00494	99	-	-	70-130	-	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2120709
Report Date: 05/05/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1490003-4 QC Sample: L2120709-02 Client ID: MYSTIC-1_2021-0422						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	ND	ND	mg/l	NC		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	ND	ND	mg/l	NC		20
Copper, Total	ND	ND	mg/l	NC		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	ND	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1490008-4 QC Sample: L2120709-02 Client ID: MYSTIC-1_2021-0422						
Iron, Total	0.442	0.448	mg/l	1		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1490008-4 QC Sample: L2120709-02 Client ID: MYSTIC-1_2021-0422						
Hardness	1650	1680	mg/l	2		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1490008-8 QC Sample: L2120724-01 Client ID: DUP Sample						
Iron, Total	2.95	2.97	mg/l	1		20
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1490011-4 QC Sample: L2120441-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2120709
Report Date: 05/05/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1490011-6 QC Sample: L2120447-01 Client ID: DUP Sample					
Mercury, Total	ND	ND	mg/l	NC	20

INORGANICS
&
MISCELLANEOUS

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2120709
Report Date: 05/05/21

SAMPLE RESULTS

Lab ID: L2120709-01
Client ID: HA20-105(OW)_2021-0422
Sample Location: SOMERVILLE, MA
Sample Depth:
Matrix: Water
Date Collected: 04/22/21 10:40
Date Received: 04/22/21
Field Prep: None

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	26.		mg/l	5.0	NA	1	-	04/27/21 08:50	121,2540D	AC
Cyanide, Total	ND		mg/l	0.005	--	1	04/26/21 09:55	04/26/21 12:48	121,4500CN-CE	CR
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	04/23/21 08:24	121,4500CL-D	MR
Nitrogen, Ammonia	1.08		mg/l	0.075	--	1	04/27/21 10:00	04/28/21 14:00	121,4500NH3-BH	JO
TPH, SGT-HEM	4.52		mg/l	4.00	--	1	04/27/21 18:00	04/27/21 18:45	74,1664A	TL
Phenolics, Total	ND		mg/l	0.030	--	1	04/26/21 06:57	04/26/21 11:34	4,420.1	KP
Chromium, Hexavalent	ND		mg/l	0.010	--	1	04/23/21 06:30	04/23/21 06:52	1,7196A	AW
Anions by Ion Chromatography - Westborough Lab										
Chloride	353.		mg/l	12.5	--	25	-	04/25/21 17:01	44,300.0	SH

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2120709
Report Date: 05/05/21

SAMPLE RESULTS

Lab ID: L2120709-02
Client ID: MYSTIC-1_2021-0422
Sample Location: SOMERVILLE, MA
Sample Depth:
Matrix: Water

Date Collected: 04/22/21 12:40
Date Received: 04/22/21
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Nitrogen, Ammonia	0.228		mg/l	0.075	--	1	04/27/21 10:00	04/28/21 14:01	121,4500NH3-BH	JO

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009
Lab Number: L2120709
Report Date: 05/05/21

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: WG1489700-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	04/23/21 08:24	121,4500CL-D	MR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1489765-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	04/23/21 06:30	04/23/21 06:50	1,7196A	AW
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1490522-1										
Chloride	ND		mg/l	0.500	--	1	-	04/25/21 13:01	44,300.0	SH
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1490596-1										
Phenolics, Total	ND		mg/l	0.030	--	1	04/26/21 06:57	04/26/21 11:27	4,420.1	KP
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1490673-1										
Cyanide, Total	ND		mg/l	0.005	--	1	04/26/21 09:55	04/26/21 12:41	121,4500CN-CE	CR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1491157-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	04/27/21 08:50	121,2540D	AC
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1491245-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	04/27/21 10:00	04/28/21 13:56	121,4500NH3-BH	JO
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1491412-1										
TPH, SGT-HEM	ND		mg/l	4.00	--	1	04/27/21 18:00	04/27/21 18:45	74,1664A	TL

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2120709
Report Date: 05/05/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1489700-2								
Chlorine, Total Residual	104		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1489765-2								
Chromium, Hexavalent	101		-		85-115	-		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1490522-2								
Chloride	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1490596-2								
Phenolics, Total	88		-		70-130	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1490673-2								
Cyanide, Total	102		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1491157-2								
Solids, Total Suspended	105		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1491245-2								
Nitrogen, Ammonia	94		-		80-120	-		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2120709
Report Date: 05/05/21

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1491412-2					
TPH	79	-	64-132	-	34

Matrix Spike Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2120709
Report Date: 05/05/21

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: WG1489700-4 QC Sample: L2120325-04 Client ID: MS Sample												
Chlorine, Total Residual	ND	0.25	0.26	104		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1489765-4 QC Sample: L2120709-01 Client ID: HA20-105(OW)_2021-0422												
Chromium, Hexavalent	ND	0.1	0.093	93		-	-		85-115	-		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1490522-3 QC Sample: L2119365-02 Client ID: MS Sample												
Chloride	5.96	4	9.38	**86**	Q	-	-		90-110	-		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1490596-4 QC Sample: L2120971-01 Client ID: MS Sample												
Phenolics, Total	ND	0.4	0.38	96		-	-		70-130	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1490673-3 WG1490673-4 QC Sample: L2119063-02 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.202	101		0.203	102		90-110	0		30
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1491245-4 QC Sample: L2120724-02 Client ID: MS Sample												
Nitrogen, Ammonia	0.468	4	4.30	96		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1491412-4 QC Sample: L2116521-174 Client ID: MS Sample												
TPH	ND	20.8	17.3	83		-	-		64-132	-		34

Lab Duplicate Analysis
Batch Quality Control

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2120709
Report Date: 05/05/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1489700-3 QC Sample: L2120325-02 Client ID: DUP Sample						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1489765-3 QC Sample: L2120709-01 Client ID: HA20-105(OW)_2021-0422						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1490522-4 QC Sample: L2119365-02 Client ID: DUP Sample						
Chloride	5.96	5.91	mg/l	1		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1490596-3 QC Sample: L2120971-01 Client ID: DUP Sample						
Phenolics, Total	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1491157-3 QC Sample: L2120328-01 Client ID: DUP Sample						
Solids, Total Suspended	48	50	mg/l	4		29
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1491245-3 QC Sample: L2120724-02 Client ID: DUP Sample						
Nitrogen, Ammonia	0.468	0.589	mg/l	**23**	Q	20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1491412-3 QC Sample: L2116521-173 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2120709
Report Date: 05/05/21

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(*)
L2120709-01A	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		624.1-RGP(7)
L2120709-01B	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		624.1-RGP(7)
L2120709-01C	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		624.1-RGP(7)
L2120709-01D	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		504(14)
L2120709-01E	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		504(14)
L2120709-01F	Vial unpreserved	A	NA		2.8	Y	Absent		SUB-ETHANOL(14)
L2120709-01G	Vial unpreserved	A	NA		2.8	Y	Absent		SUB-ETHANOL(14)
L2120709-01H	Vial unpreserved	A	NA		2.8	Y	Absent		SUB-ETHANOL(14)
L2120709-01J	Plastic 250ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		HARDU(180),CR-2008T(180)
L2120709-01K	Plastic 250ml NaOH preserved	A	>12	>12	2.8	Y	Absent		TCN-4500(14)
L2120709-01L	Plastic 250ml NaOH preserved	A	>12	>12	2.8	Y	Absent		HOLD-WETCHEM()
L2120709-01M	Plastic 950ml unpreserved	A	7	7	2.8	Y	Absent		HEXCR-7196(1),HOLD-WETCHEM(),CL-300(28),TRC-4500(1)
L2120709-01N	Plastic 950ml unpreserved	A	7	7	2.8	Y	Absent		TSS-2540(7)
L2120709-01O	Amber 950ml H2SO4 preserved	A	<2	<2	2.8	Y	Absent		TPHENOL-420(28)
L2120709-01P	Amber 1000ml Na2S2O3	A	7	7	2.8	Y	Absent		625.1-SIM-RGP(7)
L2120709-01Q	Amber 1000ml Na2S2O3	A	7	7	2.8	Y	Absent		625.1-SIM-RGP(7)
L2120709-01R	Amber 1000ml HCl preserved	A	NA		2.8	Y	Absent		TPH-1664(28)
L2120709-01S	Amber 1000ml HCl preserved	A	NA		2.8	Y	Absent		TPH-1664(28)
L2120709-01X	Plastic 250ml H2SO4 preserved split	A	7	<2	2.8	N	Absent		NH3-4500(28)
L2120709-02A	Plastic 250ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		CR-2008S(180),AG-2008S(180),FE-RI(180),HOLD-METAL-DISSOLVED(180),AS-2008S(180),ZN-2008S(180),PB-2008S(180),NI-2008S(180),SE-2008S(180),CD-2008S(180),CU-2008S(180),SB-2008S(180),HG-R(28)

*Values in parentheses indicate holding time in days

Project Name: 74 MIDDLESEX AVENUE
Project Number: 134081-009

Lab Number: L2120709
Report Date: 05/05/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2120709-02B	Plastic 250ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),FE-UI(180),HARDU(180),CU-2008T(180),AG-2008T(180),HG-U(28),AS-2008T(180),SE-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L2120709-02C	Plastic 500ml H2SO4 preserved	A	<2	<2	2.8	Y	Absent		NH3-4500(28)

Container Comments

L2120709-01X WM: H2SO4 added per PM 4/23/21 @ 14:10

*Values in parentheses indicate holding time in days

Project Name:	74 MIDDLESEX AVENUE	**Lab Number:**	L2120709
Project Number:	134081-009	**Report Date:**	05/05/21

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.

Report Format: Data Usability Report

Project Name:	74 MIDDLESEX AVENUE	**Lab Number:**	L2120709
Project Number:	134081-009	**Report Date:**	05/05/21

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 at or above the RL for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. (Note: 'PFAS, Total (6)' is applicable to MassDEP DW compliance analysis only.). 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

Report Format: Data Usability Report

Project Name:	74 MIDDLESEX AVENUE	**Lab Number:**	L2120709
Project Number:	134081-009	**Report Date:**	05/05/21

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.

Report Format: Data Usability Report

Project Name:	74 MIDDLESEX AVENUE	**Lab Number:**	L2120709
Project Number:	134081-009	**Report Date:**	05/05/21

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.

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

107 Alpha Analytical - In-house calculation method.

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

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

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

LIMITATION OF LIABILITIES

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

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

Certification Information

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

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

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193
Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers: Brewer, ME 04412 — Portsmouth, NH 03801 Mahwah, NJ 07430 — Albany, NY 12205 — Tonawanda, NY 14150 — Holmes, PA 19043

Page 1 of 2

Date Rec'd In Lab: 04/22/21

ALPHA Job #: L2120709

H&A Information

H&A Client: Greystar
H&A Address: 465 Medford St
Boston, MA 02129-1400
H&A Phone: 617-886-7400
H&A Fax:
H&A Email: HBallantyne, Kingraham

Project Information

Project Name: 74 Middlesex
Project Location: 74 Middlesex, Somerville, MA
Project #: 134081-009
(Use Project name as Project #)
Project Manager: H Ballantyne
ALPHAQuote #:

Turn-Around Time

Standard ☑ — Due Date:
(only if pre approved) ☐ — # of Days:

Deliverables

☑ Email ☐ Fax
☑ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other:

Billing Information

☑ Same as Client Info
PO #

Regulatory Requirements (Program/Criteria)

Note: Select State from menu & identify criteria.

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility: ☐ NJ ☐ NY
Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please sample per EPA Approved 2017 RGP Permit methods
Hold dissolved trivelent chromium (field filtered); Hold dissolved hexavalent chromium (field filtered)

Please specify Metals or TAL.

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	1. RGP Volatile Organics - EPA 625.1-SIM	2. RGP ABN Extractables - EPA 625.1-SIM	3. TSS - SM 2540	4. TRC - SM 4500	5. Chloride by IC - EPA 300.0	6. Total Cyanide - SM 4500	7. Physiologically Available Cyanide	8. Ammable Cyanide - SM 4500	9. Hexavalent Chromium - EPA 7196	10. Trivalent Chromium - EPA 7196/6010	11 Ethanol by EPA 1671 Revision A	12. Total Phenol - EPA 420.1	13. TPH by EPA 1664	14. DB, DBCP & 123TCP - EPA 504.1			
2120709-01	HA-105(OW)_2021-0422	4/22/2021	10:40	AQ	NTL	X	X	X	X	X	X	X	X	X	X	X	X	X	X			

Container Type: A P P P P P P P P P V A A V
Preservative: H E A A A E E E A A A D B H

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Sample Specific Comments: Temp -10.4C pH - 6.10

TURN AROUND TIME: RS

Preservative Code: A = None; B = HCl; C = HNO_3; D = H_2SO_4; E = NaOH; F = MeOH; G = $NaHSO_4$; H = $Na_2S_2O_3$; K/E = Zn Ac/NaOH; O = Other

Container Code: P = Plastic; A = Amber Glass; V = Vial; G = Glass; B = Bacteria Cup; C = Cube; O = Other; E = Encore; D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	4/22/21 13:30		
	4/22/21 1838		4/20/21 1640
			4/22/21 1838

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. Alpha Analytical's services under this Chain of Custody shall be performed in accordance with terms and conditions within Blanket Service Agreement# 2015-18-Alpha Analytical by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and Alpha Analytical.

Document ID: 20455 Rev 1 (1/28/2016)

CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers: Brewer, ME 04412 — Portsmouth, NH 03801 — Mahwah, NJ 07430 — Albany, NY 12205 — Tonawanda, NY 14150 — Holmes, PA 19043

Page 2 of 2

Date Rec'd in Lab: 04/22/21

ALPHA Job #: L2120709

H&A Information

H&A Client: Greystar

H&A Address: 465 Medford St

Boston, MA 02129-1400

H&A Phone: 617-886-7400

H&A Fax:

H&A Email: HBallantyne, Kingraham

Project Information

Project Name: 74 Middlesex

Project Location: 74 Middlesex, Somerville, MA

Project #: 134081-009

(Use Project name as Project #) ☑

Project Manager: H Ballantyne

ALPHAQuote #:

Turn-Around Time

Standard ☑ Due Date:

(only if pre approved) ☐ # of Days:

Deliverables

☑ Email ☐ Fax

☑ EQuIS (1 File) ☐ EQuIS (4 File)

☐ Other:

Billing Information

☑ Same as Client Info

PO #

Regulatory Requirements (Program/Criteria)

Note: Select State from menu & identify criteria.

Disposal Site Information

Please identify below location of applicable disposal facilities.

Disposal Facility: ☐ NJ ☐ NY ☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please sample per EPA Approved 2017 RGP Permit methods

Please specify Metals or TAL.

ANALYSIS

1. Ammonia Nitrogen - SM 4500
2. Total Hardness
3. Total NPDES Metals
4. Soluble NPDES Metals - EPA 22.8/245.1

Sample Filtration

☑ Done ☐ Lab to do

Preservation ☐ Lab to do

(Please Specify below)

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	1	2	3	4	Total Bottles
20709-02	MYSTIC-1_2021-0422	4/22/2021	12:40	AQ	NTL	X	X	X	X	3

Container Type: P P P

Preservative: C D C

Preservative Code: A = None; B = HCl; C = HNO_3; D = H_2SO_4; E = NaOH; F = MeOH; G = $NaHSO_4$; H = $Na_2S_2O_3$; K/E = Zn Ac/NaOH; O = Other

Container Code: P = Plastic; A = Amber Glass; V = Vial; G = Glass; B = Bacteria Cup; C = Cube; O = Other; E = Encore; D = BOD Bottle

Westboro: Certification No: MA935

Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	4.22.21 19:30		Plum KAL 4/22/21 1640
	4/22/21 1838		4/22/21 1838

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. Alpha Analytical's services under this Chain of Custody shall be performed in accordance with terms and conditions within Blanket Service Agreement# 2015-18-Alpha Analytical by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and Alpha Analytical.

Document ID: 20455 Rev 1 (1/28/2016)

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

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

Alpha Job Number
L2120709

Client Information

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

Phone: 603.319.5010
Email: mgulli@alphalab.com

Project Information

Project Location: MA
Project Manager: Melissa Gulli

Turnaround & Deliverables Information

Due Date:
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:
Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2120709

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
	HA20-105(OW)_2021-0422	04-22-21 10:40	WATER	Ethanol by EPA 1671 Revision A	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
		4/26/21		
Form No: AL_subcoc				

Teklab, Inc.
Environmental Laboratory
http://www.teklabinc.com/

May 03, 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: L2120709 **WorkOrder:** 21041565

Dear Melissa Gulli:

TEKLAB, INC received 1 sample on 4/27/2021 10:06:00 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
Client Project: L2120709

Work Order: 21041565
Report Date: 03-May-21

This reporting package includes the following:

Teklab, Inc.
Environmental Laboratory

Definitions

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 21041565
Client Project: L2120709
Report Date: 03-May-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: 21041565
Client Project: L2120709
Report Date: 03-May-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: L2120709

Work Order: 21041565
Report Date: 03-May-21

Cooler Receipt Temp: 1.8 °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
Work Order: 21041565
Client Project: L2120709
Report Date: 03-May-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	6/30/2021	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2021	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2021	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: 21041565
Client Project: L2120709
Report Date: 03-May-21
Lab ID: 21041565-001
Client Sample ID: HA20-105(OW)_2021-0422
Matrix: AQUEOUS
Collection Date: 04/22/2021 10:40

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	04/30/2021 13:40	R290427

Teklab, Inc. Environmental Laboratory

Quality Control Results

http://www.teklabinc.com/

Client: Alpha Analytical
Client Project: L2120709

Work Order: 21041565
Report Date: 03-May-21

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

Batch R290427 **SampType:** MBLK Units **mg/L**
SampID: MBLK-043021

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	*	20		**ND**						04/30/2021

Batch R290427 **SampType:** LCS Units **mg/L**
SampID: LCS-043021

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	*	20		**270**	250.0	0	107.0	70	132	04/30/2021

Batch R290427 **SampType:** MS Units **mg/L**
SampID: 21041476-002AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	*	20		**280**	250.0	0	111.0	70	132	04/30/2021

Batch R290427 **SampType:** MSD Units **mg/L** RPD Limit **30**
SampID: 21041476-002AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Ethanol	*	20		**300**	250.0	0	119.3	277.4	7.22	04/30/2021

Teklab, Inc. Environmental Laboratory

Receiving Check List

http://www.teklabinc.com/

Client: Alpha Analytical
Client Project: L2120709

Work Order: 21041565
Report Date: 03-May-21

Carrier: UPS

Received By: PRY

Completed by: Ellie Hopkins
On: 27-Apr-21

Reviewed by: Elizabeth A. Hurley
On: 27-Apr-21

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

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 1.8
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.

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

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

2104565
Alpha Job Number
L2120709

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: L2120709

Report to include Method Blank, LCS/LCSD:

Additional Comments: Send all results/reports to subreports@alphalab.com 1.8°C LTGI Ice. OHS: PLY 4/27/21

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
2104565-001	HA20-105(OW)_2021-0422	04-22-21 10:40	WATER	Ethanol by EPA 1671 Revision A	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
		4/26/21	(UPS)	4/27/21 1006
Form No: AL_subcoc				

PLY 4/27/21

APPENDIX D

Chemicals and Additives Information

sc200™ UNIVERSAL CONTROLLER

Applications
- Drinking Water
- Wastewater
- Industrial Water
- Power

One Controller for the Broadest Range of Sensors.

Choose from 30 digital and analog sensor families for up to 17 different parameters.

Maximum Versatility

The sc200 controller allows the use of digital and analog sensors, either alone or in combination, to provide compatibility with Hach's broad range of sensors, eliminating the need for dedicated, parameter-specific controllers.

Ease of Use and Confidence in Results

Large, high-resolution, transreflective display provides optimal viewing resolution in any lighting condition. Guided calibration procedures in 19 languages minimize complexity and reduce operator error. Password-protected SD card reader offers a simple solution for data download and transfer. Visual warning system provides critical alerts.

Wide Variety of Communication Options

Utilize two to five analog outputs to transmit primary and secondary values for each sensor, or integrate Hach sensors and analyzers into MODBUS RS232/RS485, Profibus® DP, and HART networks.

Password protected SD card reader offers a simple solution for data download and transfer, and sc200 and digital sensor configuration file duplication and backup.

HACH®
Be Right™

Controller Comparison

Features	Previous Models sc100™ Controller	Previous Models GLI53 Controller	sc200™ Controller	Benefits
Display	64 x 128 pixels 33 x 66 mm (1.3 x 2.6 in.)	64 x 128 pixels 33 x 66 mm (1.3 x 2.6 in.)	160 x 240 pixels 48 x 68 mm (1.89 x 2.67 in.) Transreflective	• Improved user interface—50% bigger • Easier to read in daylight and sunlight
Data Management	irDA Port/PDA Service Cable	N/A	SD Card Service Cable	• Simplifies data transfer • Standardized accessories/max compatibility
Sensor Inputs	2 Max Direct Digital Analog via External Gateway	2 Max Analog Depending on Parameter	2 Max Digital and/or Analog with Sensor Card	• Simplifies analog sensor connections • Works with analog and digital sensors
Analog Inputs	N/A	N/A	1 Analog Input Signal Analog 4-20mA Card	• Enables non-sc analyzer monitoring • Accepts mA signals from other analyzers for local display • Consolidates analog mA signals to a digital output
4-20 mA Outputs	2 Standard	2 Standard	2 Standard Optional 3 Additional	• Total of five (5) 4-20 mA outputs allows multiple mA outputs per sensor input
Digital Communication	MODBUS RS232/RS485 Profibus DP V1.0	HART	MODBUS RS232/RS485 Profibus DP V1.0 HART 7.2	• Unprecedented combination of sensor breadth and digital communication options

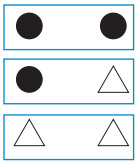
Choose from Hach's Broad Range of Digital and Analog Sensors

Parameter	Sensor	Digital or Analog
Ammonia	AMTAX™ sc, NH4D sc, AISE sc, AN-ISE sc	●
Chlorine	CLF10 sc, CLT10 sc, 9184 sc	●
Chlorine Dioxide	9185 sc	●
Conductivity	GLI 3400 Contacting, GLI 3700 Inductive	△
Dissolved Oxygen	LDO® Model 2, 5740 sc	●
Dissolved Oxygen	5500	△
Flow	U53, F53 Sensors	△
Nitrate	NITRATAX™ sc, NO3D sc, NISE sc, AN-ISE sc	●
Oil in Water	FP360 sc	●
Organics	UVAS sc	●
Ozone	9187 sc	●
pH/ORP	pHD	●
pH/ORP	pHD, pH Combination, LCP	△
Phosphate	PHOSPHAX™ sc	●
Sludge Level	SONATAX™ sc	●
Suspended Solids	SOLITAX™ sc, TSS sc	●
Turbidity	1720E, FT660 sc, SS7 sc, ULTRATURB sc, SOLITAX sc, TSS sc	●
Ultra Pure Conductivity	8310, 8311, 8312, 8315, 8316, 8317 Contacting	△
Ultra Pure pH/ORP	8362	△

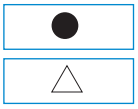
● = Digital △ = Analog

Connect up to two of any of the sensors listed above, in any combination, to meet your application needs. The diagrams below demonstrate the potential configurations. Operation of analog sensors requires the controller to be equipped with the appropriate sensor module. Contact Hach Technical Support for help with selecting the appropriate module.

2 Channel Configurations



1 Channel Configurations



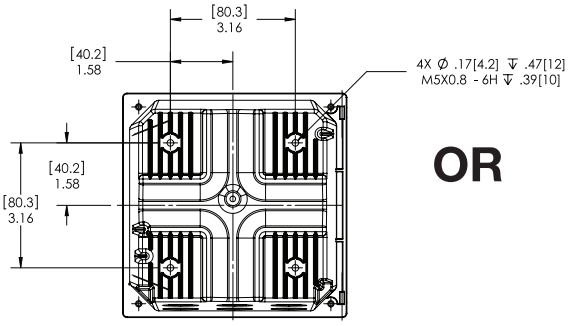
Specifications*

Dimensions (H x W x D)	5.7 in x 5.7 in x 7.1 in (144 mm x 144 mm x 181 mm)
Display	Graphic dot matrix LCD with LED backlighting, transreflective
Display Size	1.9 x 2.7 in. (48 mm x 68 mm)
Display Resolution	240 x 160 pixels
Weight	3.75 lbs. (1.70 kg)
Power Requirements (Voltage)	100 - 240 V AC, 24 V DC
Power Requirements (Hz)	50/60 Hz
Operating Temperature Range	-20 to 60 °C , 0 to 95% RH non-condensing
Analog Outputs	Two (Five with optional expansion module) to isolated current outputs, max 550 Ω , Accuracy: ± 0.1% of FS (20mA) at 25 °C, ± 0.5% of FS over -20 °C to 60 °C range Operational Mode: measurement or calculated value
Analog Output Functional Mode	Linear, Logarithmic, Bi-linear, PID
Security Levels	2 password-protected levels
Mounting Configurations	Wall, pole, and panel mounting
Enclosure Rating	NEMA 4X/IP66
Conduit Openings	1/2 in NPT Conduit
Relay: Operational Mode	Primary or secondary measurement, calculated value (dual channel only) or timer
Relay Functions	Scheduler (Timer), Alarm, Feeder Control, Event Control, Pulse Width Modulation, Frequency Control, and Warning
Relays	Four electromechanical SPDT (Form C) contacts, 1200 W, 5 A
Communication	MODBUS RS232/RS485, PROFIBUS DPV1, or HART 7.2 optional
Memory Backup	Flash memory
Electrical Certifications	EMC CE compliant for conducted and radiated emissions: - CISPR 11 (Class A limits) - EMC Immunity EN 61326-1 (Industrial limits) Safety cETLus safety mark for: - General Locations per ANSI/UL 61010-1 & CAN/CSA C22.2. No. 61010-1 - Hazardous Location Class I, Division 2, Groups A,B,C & D (Zone 2, Group IIC) per FM 3600 / FM 3611 & CSA C22.2 No. 213 M1987 with approved options and appropriately rated Class I, Division 2 or Zone 2 sensors cULus safety mark - General Locations per UL 61010-1 & CAN/CSA C22.2. No. 61010-1

Subject to change without notice.

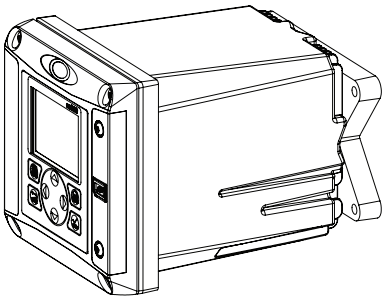
Dimensions

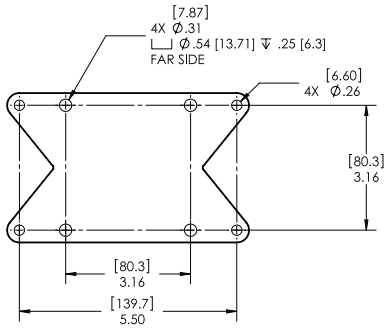
Surface Mounting Dimensions



Mounting Dimensions
(Rear View)

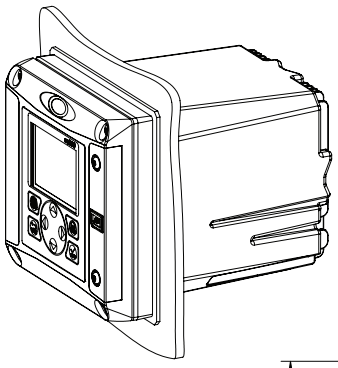
OR

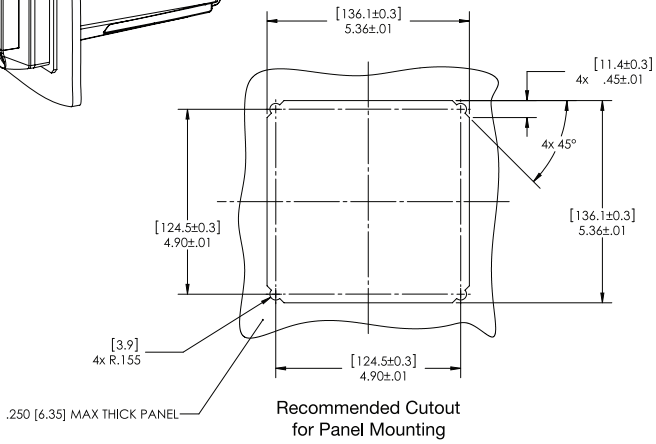




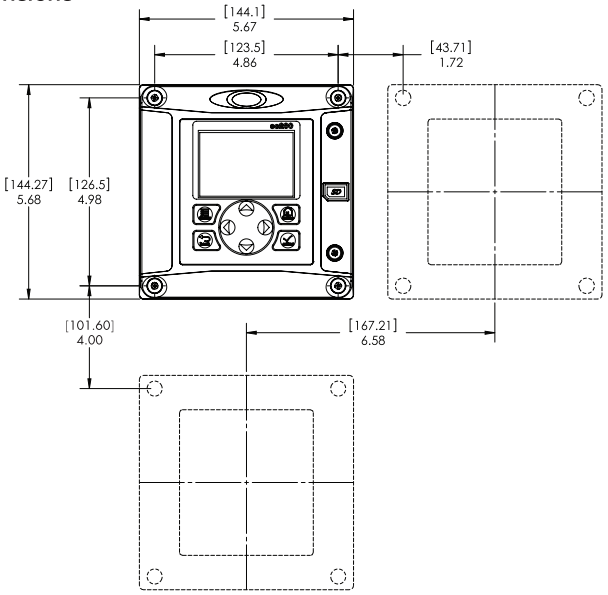
Bracket (supplied) for Surface Mounting
(Not compatible with Weather and Sun Shield
p/n 9220600 when surface mounting.)

Panel Mounting Dimensions



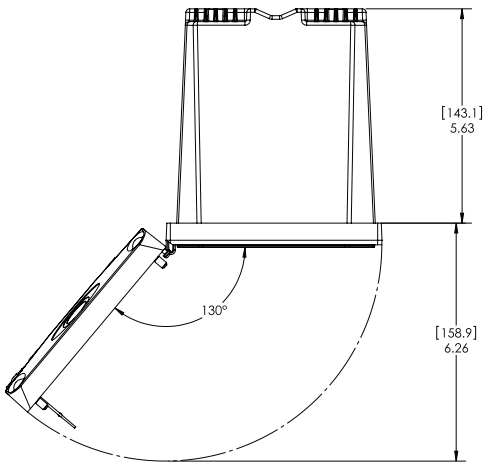


Recommended Cutout
for Panel Mounting

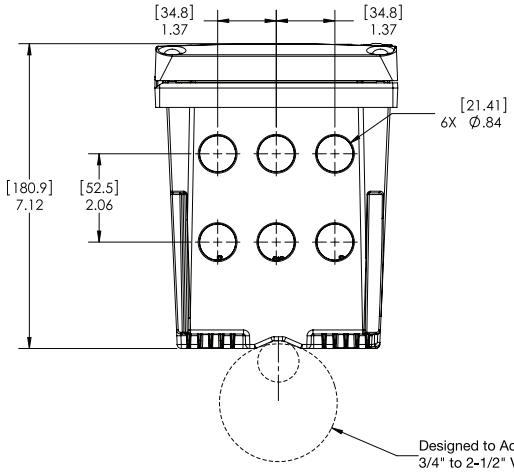


Minimum Spacing Dimensions
for Group Mounting

Top and Bottom Views



Door Opening Details



Ordering Information

sc200 for Hach Digital and Analog Sensors

LXV404.99.00552	sc200 controller, 2 channels, digital
LXV404.99.00502	sc200 controller, 1 channel, digital
LXV404.99.00102	sc200 controller, 1 channel, pH/DO
LXV404.99.00202	sc200 controller, 1 channel, Conductivity
LXV404.99.01552	sc200 controller, 2 channels, digital, Modbus RS232/RS485
LXV404.99.00112	sc200 controller, 2 channel, pH/DO

Note: Other Sensor combinations are available. Please contact Hach Technical Support or your Hach representative.

Note: Communication options (MODBUS, Profibus DPV1, and HART) are available. Please contact Hach Technical Support or your Hach representative.

sc200 for Ultrapure Sensors

9500.99.00602	sc200 controller, 1 channel, ultrapure conductivity
9500.99.00702	sc200 controller, 1 channel, ultrapure pH
9500.99.00662	sc200 controller, 2 channel, ultrapure conductivity
9500.99.00772	sc200 controller, 2 channel, ultrapure pH

Sensor and Communication Modules

9012900	Analog pH/ORP and DO module for GLI Sensors
9013000	Analog Conductivity module for GLI Sensors
9012700	Flow module
9012800	4-20 mA Input Module
9525700	Analog pH/ORP Module for Polymetron Sensors
9525800	Analog Conductivity Module for Polymetron Sensors
9013200	Modbus 232/485 Module
9173900	Profibus DP Module
9328100	HART Module
9334600	4-20 mA Output Module (Provides 3 additional mA Outputs)

Accessories

9220600	sc200 Weather and Sun Shield with UV Protection Screen
8809200	sc200 UV Protection Screen
9218200	SD card reader (USB) for connection to PC
9218100	4 GB SD card

HACH COMPANY World Headquarters: Loveland, Colorado USA

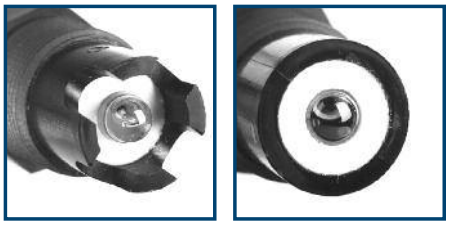
United States: 800-227-4224 tel 970-669-2932 fax orders@hach.com
Outside United States: 970-669-3050 tel 970-461-3939 fax int@hach.com
hach.com

LIT2665 Rev 7
K13 Printed in U.S.A.

HACH®
Be Right™

3/4-inch Combination pH and ORP Sensor Kits

Use the Digital Gateway to make any Hach analog combination pH or ORP sensor compatible with the Hach sc1000 Controller.



Digital combination pH and ORP sensors are available in convertible, insertion, and sanitary mounting styles. Choose from rugged dome electrodes or "easy-to-clean" flat glass electrodes.

Features and Benefits

Low Price—High Performance

These combination sensors are designed for specialty applications for immersion or in-line mounting. The reference cell features a double-junction design for extended service life, and a built-in solution ground. The body is molded from chemically-resistant Ryton® or PVDF, and the reference junction is coaxial porous PTFE. All sensors are rated 0 to 105ºC up to 100 psig, and have integral 4.5 m (15 ft.) cables with tinned leads. The PC-series (for pH) and RC-series (for ORP) combination sensors are ideal for measuring mild and aggressive media.

Special Electrode Configurations

Sensors with rugged dome electrodes, "easy-to-clean" flat glass electrodes, and even HF (hydrofluoric acid) resistant glass electrodes are available for a wide variety of process solutions.

Temperature Compensation Element Option

The PC-series combination pH sensors are available with or without a Pt 1000 ohm RTD temperature element. The RC-series combination ORP sensors are supplied without a temperature element.

Versatile Mounting Styles

Sensors are available in three mounting styles—convertible, insertion, and sanitary. Please turn to page 3 for more information.

Full-Featured "Plug and Play" Hach sc Digital Controllers

There are no complicated wiring or set up procedures with any Hach sc controller. Just plug in any combination of Hach digital sensors and it's ready to use—it's "plug and play."

One or multiple sensors—The sc controller family allows you to receive data from up to eight Hach digital sensors in any combination using a single controller.

Communications—Multiple alarm/control schemes are available using the relays and PID control outputs. Available communications include analog 4-20 mA, digital MODBUS® (RS485 and RS232) or Profibus DP protocols. (Other digital protocols are available. Contact your Hach representative for details.)

Data logger—A built-in data logger collects measurement data, calibration, verification points, and alarm history.

Specifications*

Most pH applications fall in the 2.5-12.5 pH range. General purpose pH glass electrodes perform well in this range. Some industrial applications require accurate measurements and control at pH values below 2 or above 12. Consult Hach Technical Support for details on these applications.

Combination pH Sensors

Measuring Range
0 to 14 pH

Accuracy
Less than 0.1 pH under reference conditions

Temperature Range
0 to 105°C (32 to 221°F)

Flow Rate
0 to 2 m/s (0 to 6.6 ft./s); non-abrasive

Pressure Range
0 to 6.9 bar at 100°C (0 to 100 psig at 212°F)

Signal Transmission Distance
100 m (328 ft.) when used with the Hach Digital Gateway and a Hach sc Digital Controller.

1000 m (3280 ft.) when used with the Hach Digital Gateway, Termination Box, and a Hach sc Digital Controller.

Sensor Cable
Integral coaxial cable (plus two conductors for temperature compensator option); 4.5 m (15 ft.) long

Wetted Materials

Convertible style: Ryton® body (glass filled)

Insertion style: PVDF body (Kynar®)

Sanitary style: 316 stainless steel sleeved PVDF body

Common materials for all sensor styles include PTFE double junction, glass process electrode, and Viton® O-rings

Warranty
90 days

Combination ORP Sensors

Measuring Range
-2000 to +2000 millivolts

Accuracy
Limited to calibration solution accuracy (± 20 mV)

Temperature Range
0 to 105°C (32 to 221°F)

Flow Rate
0 to 2 m/s (0 to 6.6 ft./s); non-abrasive

Pressure Range
0 to 6.9 bar at 100°C (0 to 100 psig at 212°F)

Signal Transmission Distance
100 m (328 ft.) when used with the Hach Digital Gateway and a Hach sc Digital Controller.

1000 m (3280 ft.) when used with the Hach Digital Gateway, Termination Box, and a Hach sc Digital Controller.

Sensor Cable
Integral coaxial cable; 4.5 m (15 ft.) long; terminated with stripped and tinned wires

Wetted Materials

Convertible style: Ryton® body (glass filled)

Insertion style: PVDF body (Kynar®)

Common materials for all sensor styles include PTFE double junction, glass with platinum process electrode, and Viton® O-rings

Warranty
90 days

**Specifications subject to change without notice.*

Engineering Specifications

1. The pH sensor shall be available in convertible, insertion or sanitary styles. The ORP sensor shall be available in only convertible or insertion styles.
2. The convertible style sensor shall have a Ryton® body. The insertion style sensor shall have a PVDF body. The sanitary style sensor shall have a 316 stainless steel sleeved PVDF body. Common materials for all sensor styles shall include a PTFE double junction, and Viton® O-rings. The pH sensor shall have a glass pH electrode. The ORP sensor shall have a platinum ORP electrode.
3. The convertible style pH sensor shall be available with or without a built-in Pt 1000 ohm RTD temperature element. Insertion and sanitary style pH sensors shall have a built-in Pt 1000 ohm RTD temperature element. Convertible and insertion style ORP sensors shall not have a built-in temperature element.
4. The sensor shall communicate via MODBUS® RS-485 to a Hach sc Digital Controller.
5. The sensor shall be Hach Company Model PC sc or PC-series for pH measurement or Model PC sc or RC-series for ORP measurement.

Dimensions

Convertible Style Sensor

The convertible style sensor has a Ryton® body that features 3/4-inch NPT threads on both ends. The sensor can be directly mounted into a standard 3/4-inch pipe tee for flow-through mounting or fastened onto the end of a pipe for immersion mounting. The convertible style sensor enables inventory consolidation, thereby reducing associated costs. Mounting tees and immersion mounting hardware are offered in a variety of materials to suit application requirements.

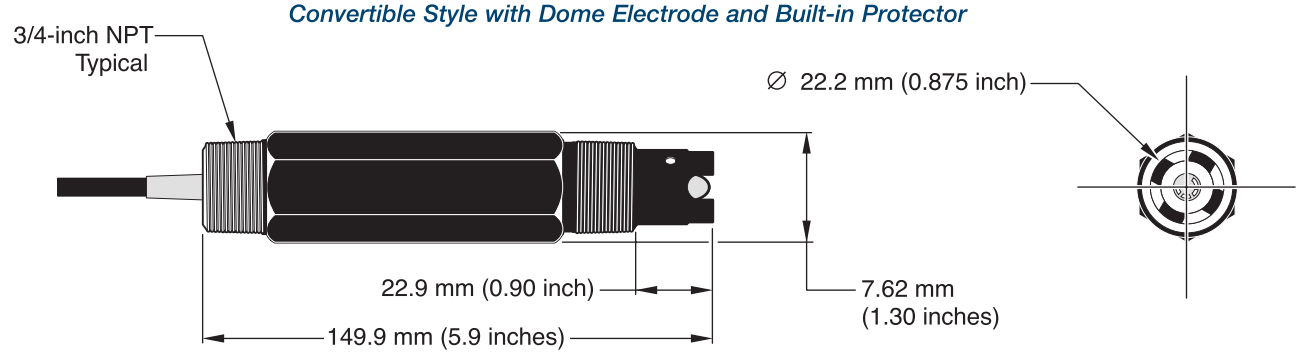
Insertion Style Sensor

Insertion style sensors feature a longer, non-threaded PVDF body with two Viton® O-rings, providing a seal when used with the optional Hach insertion mount hardware assembly. This ball valve hardware enables sensor insertion and retraction from a pipe or vessel without having to stop the process flow.

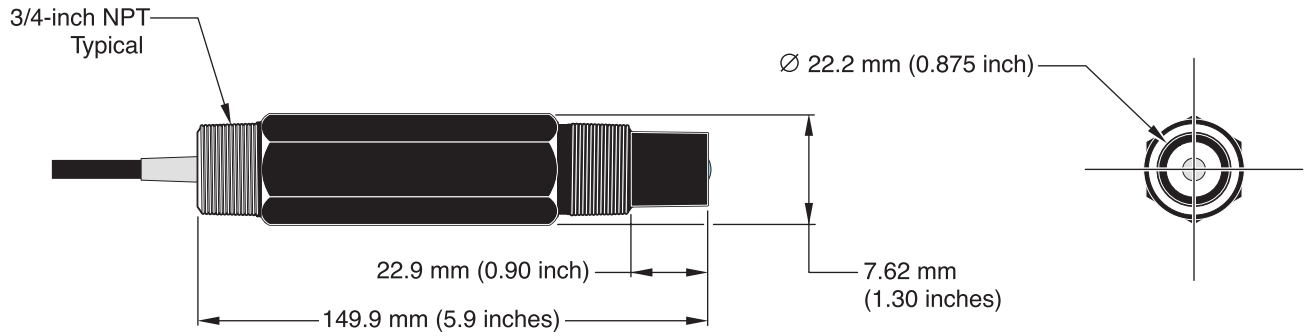
Sanitary Style Sensor

The sanitary style sensor, offered for pH measurement, has a 316 stainless steel-sleeved PVDF body with a 2-inch flange. The sensor mates to a standard 2-inch Tri-Clover fitting. The optional Hach sanitary mounting hardware includes a standard 2-inch sanitary tee, sanitary clamp, and Viton® sanitary gasket.

Convertible Style with Dome Electrode and Built-in Protector

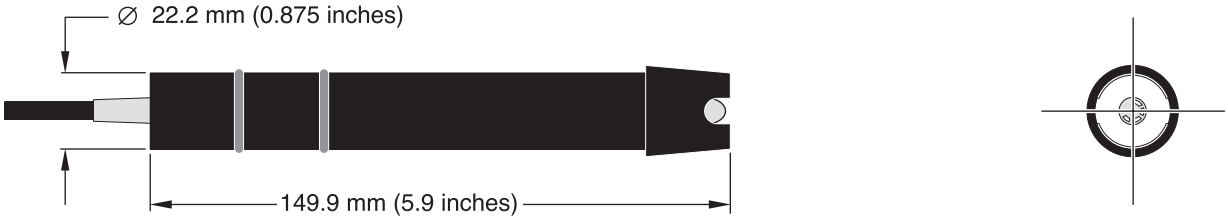


Convertible Style with Flat Electrode

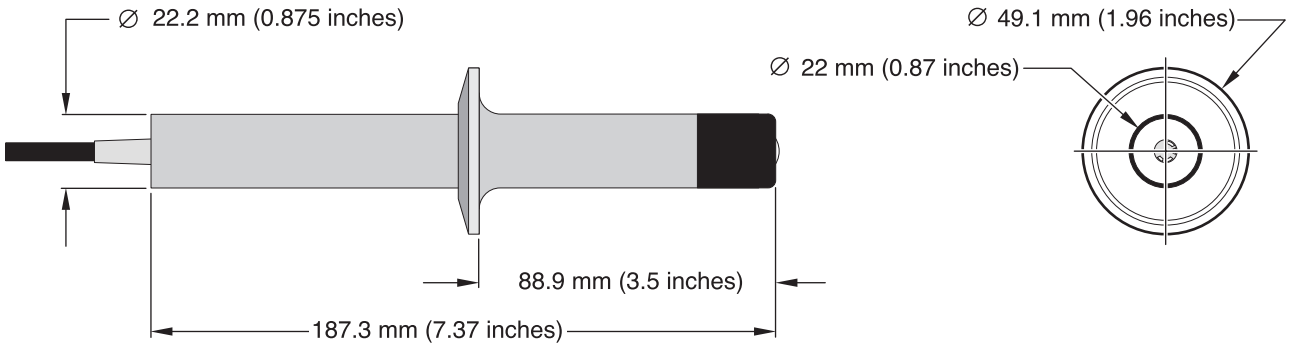


Dimensions *continued*

Insertion Style with Dome Electrode and Built-In Protector



Sanitary Style



Ordering Information

Digital PC sc and RC sc 3/4-inch Combination pH/ORP Sensors

All PC sc and RC sc 3/4-inch combination sensors come complete with an integral 4.5 m (15 ft.) sensor cable, Digital Gateway, and 1 m (3.3 ft.) digital extension cable.

Product Number	*Measurement*	*Sensor Style*	*Body Material*	*Electrode Type*	*Temp. Comp.*
DPC1R1N	pH	Convertible	Ryton	General purpose glass	None
DPC1R1A	pH	Convertible	Ryton	General purpose glass	Pt 1000 ohm RTD
DPC1R2N	pH	Convertible	Ryton	Flat glass, general purpose	None
DPC1R2A	pH	Convertible	Ryton	Flat glass, general purpose	Pt 1000 ohm RTD
DPC1R3A	pH	Convertible	Ryton	HF-resistant glass (see Note)	Pt 1000 ohm RTD
DPC2K1A	pH	Insertion	PVDF	General purpose glass	Pt 1000 ohm RTD
DPC2K2A	pH	Insertion	PVDF	Flat Glass	Pt 1000 ohm RTD
DPC3K2A	pH	Sanitary	316 SS/PVDF	General purpose glass	Pt 1000 ohm RTD
DRC1R5N	ORP	Convertible	Ryton	Platinum	None
DRC2K5N	ORP	Insertion	PVDF	Platinum	None

NOTE

The HF (hydrofluoric acid) resistant glass electrode reduces the HF dissolution of the complete glass surface to extend the lifetime of the electrode in acid fluoride solutions. The electrode will last longer than conventional glass pH electrodes. How much longer depends on the HF concentration and temperature of the solution.

Replacement Digital Gateway

6120600 Use the Digital Gateway to connect analog PC and RC sensors to a Hach sc Digital Controller.

Ordering Information *continued*

Analog PC and RC 3/4-inch Combination pH/ORP Sensors

All PC and RC 3/4-inch combination sensors come with an integral 4.5 m (15 ft.) standard length sensor cable.

Product Number	*Measurement*	*Sensor Style*	*Body Material*	*Electrode Type*	*Temp. Comp.*
PC1R1N	pH	Convertible	Ryton	General purpose glass	None
PC1R1A	pH	Convertible	Ryton	General purpose glass	Pt 1000 ohm RTD
PC1R2N	pH	Convertible	Ryton	Flat glass, general purpose	None
PC1R2A	pH	Convertible	Ryton	Flat glass, general purpose	Pt 1000 ohm RTD
PC1R3A	pH	Convertible	Ryton	HF-resistant glass	Pt 1000 ohm RTD
PC2K1A	pH	Insertion	PVDF	General purpose glass	Pt 1000 ohm RTD
PC2K2A	pH	Insertion	PVDF	Flat Glass	Pt 1000 ohm RTD
PC3K2A	pH	Sanitary	316 SS/PVDF	General purpose glass	Pt 1000 ohm RTD
RC1R5N	ORP	Convertible	Ryton	Platinum	None
RC2K5N	ORP	Insertion	PVDF	Platinum	None

Accessories for Digital and Analog 3/4-inch combination pH/ORP Sensors

Cables

Digital cables are used only with digital sensors or gateways when connecting to a Hach sc Digital Controller.

6122400 Digital Extension Cable, 1 m (3.3 ft)

5796000 Digital Extension Cable, 7.7 m (25 ft)

5796100 Digital Extension Cable, 15 m (50 ft)

5796200 Digital Extension Cable, 31 m (100 ft)

Analog cables are used only with analog sensors, junction box, and controller.

1W1100 Analog Interconnect Cable (order per foot)

Digital Termination Box

Used with digital extension cables when the desired cable length between the digital sensor/digital gateway and the Hach sc Digital Controller is between 100 m (328 ft) and 1000 m (3280 ft).

5867000 Digital Termination Box

Analog Junction Box

Used with analog interconnect cable when the desired cable length between analog sensor and analog controller is greater than the standard length of sensor cable. Each junction box includes terminal strip and gasket.

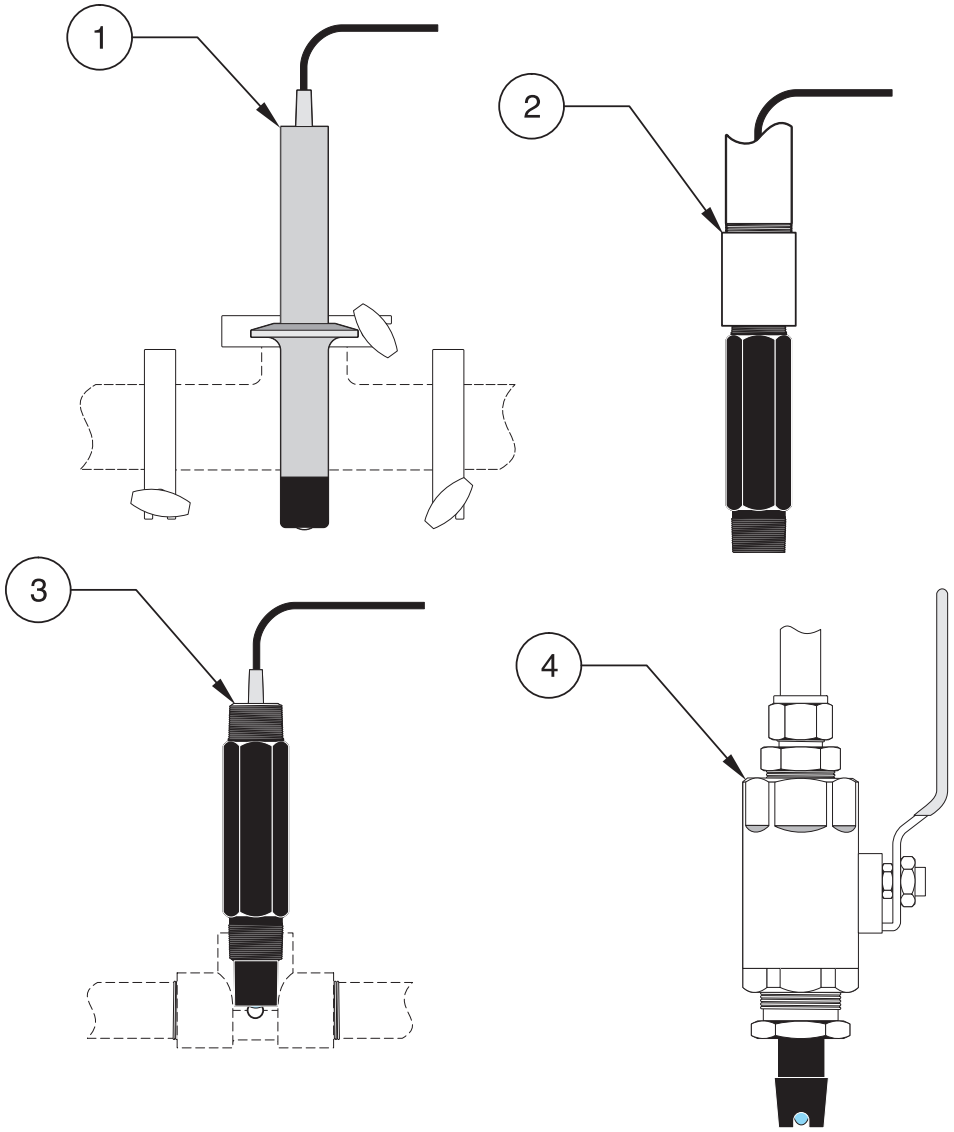
60A2053 Junction Box, Surface-mount, aluminum (includes mounting hardware)

60A9944 Junction Box, Pipe-mount, PVC, for 1/2-inch diameter pipe (includes mounting hardware)

60G2052 Junction Box, Pipe-mount, PVC, for 1-inch diameter pipe (includes mounting hardware)

76A4010-001 Junction Box, NEMA 4X (no mounting hardware included)

Ordering Information *continued*



1. Sanitary Mounting *2. Immersion Mounting* *3. Flow-through Mounting* *4. Insertion Mounting*

Mounting Hardware for PC sc and RC sc Combination Sensors

Sanitary Mount Hardware

9H1310 2-inch Sanitary Tee
9H1132 2-inch Sanitary Clamp
9H1384 2-inch Sanitary Viton Gasket

Immersion Mount Hardware

Each immersion hardware includes a 1/2-inch diameter x 4 foot long pipe, 1/2 x 3/4-inch NPT coupling, and plastic pipe-mount junction box with terminal strip.

MH432G CPVC Pipe

Flow-through Mount Hardware

Each tee is a standard 3/4-inch tee with 3/4-inch NPT threads on all three openings.

MH313N3NZ 316 SS Tee
MH333N3NZ CPVC Tee
MH373N3NZ PVC Tee

Insertion Mount Hardware

The insertion hardware includes a 1-1/2 inch ball valve, 1-1/2 inch NPT close nipple for process connection, sensor connection tube, stainless steel extension pipe, and stainless steel compression fitting with washer and lock nut.

MH116M3MZ 316 SS Hardware

To complete your pH and ORP measurement system, choose from these Hach controllers...

Model sc200 Controller

(see Lit. #2665)

The sc200 controller platform can be configured to operate either 2 Digital Sensor Inputs, or 1 or 2 Analog Sensor Inputs, or a combination of Digital and Analog Sensor Inputs. Customers may choose their communication options from a variety of offerings ranging from MODBUS RTU to Profibus DPV1.

sc200 for Hach Digital Sensors

LXV404.99.00552 sc200 controller, 2 channel, digital
LXV404.99.00502 sc200 controller, 1 channel, digital
LXV404.99.00542 sc200 controller, 2 channel, digital & mA input
LXV404.99.00512 sc200 controller, 2 channel, digital & pH/DO
LXV404.99.00522 sc200 controller, 2 channel, digital & Conductivity
LXV404.99.00532 sc200 controller, 2 channel, digital & Flow

sc200 for Hach Analog Sensors

LXV404.99.00102 sc200 controller, 1 channel, pH/DO
LXV404.99.00112 sc200 controller, 2 channel, pH/DO
LXV404.99.00202 sc200 controller, 1 channel, Conductivity
LXV404.99.00222 sc200 controller, 2 channel, Conductivity
LXV404.99.00212 sc200 controller, 2 channel, pH/DO & Conductivity
LXV404.99.00302 sc200 controller, 1 channel, Flow
LXV404.99.00332 sc200 controller, 2 channel, Flow
LXV404.99.00312 sc200 controller, 2 channel, Flow & pH/DO
LXV404.99.00322 sc200 controller, 2 channel, Flow & Conductivity

Note: Other sensor combinations are available. Please contact Hach Technical Support or your Hach representative.
Note: Communication options (MODBUS and Profibus DPV1) are available.

Model sc1000 Controller

(see Lit. #2403)

Each sc1000 Probe Module provides power to the system and can accept up to 8 digital sensors/expansion boards. Probe Modules can be networked together to accommodate up to 32 digital sensors/expansion boards attached to the same network.

LXV402.99.00002 sc1000 Display Module
LXV400.99.1R572 sc1000 Probe Module, 4 sensors, 4 mA Out, 4 mA In, 4 Relays, 110-230V
LXV400.99.1B572 sc1000 Probe Module, 4 sensors, 4 mA Out, 4 mA In, 4 Relays, RS-485 (MODBUS), 110-230V
LXV400.99.1F572 sc1000 Probe Module, 4 sensors, 4 mA Out, 4 mA In, 4 Relays, PROFIBUS DP, 110-230V
LXV400.99.1R582 sc1000 Probe Module, 6 sensors, 4 mA Out, 4 mA In, 4 Relays, 110-230V

At Hach, it's about learning from our customers and providing the right answers. It's more than ensuring the quality of water—it's about ensuring the quality of life. When it comes to the things that touch our lives...

Keep it pure.

Make it simple.

Be right.

For current price information, technical support, and ordering assistance, contact the Hach office or distributor serving your area.

In the United States, contact:

HACH COMPANY World Headquarters
P.O. Box 389
Loveland, Colorado 80539-0389
U.S.A.
Telephone: 800-227-4224
Fax: 970-669-2932
E-mail: orders@hach.com
www.hach.com

U.S. exporters and customers in Canada, Latin America, sub-Saharan Africa, Asia, and Australia/New Zealand, contact:

HACH COMPANY World Headquarters
P.O. Box 389
Loveland, Colorado 80539-0389
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Telephone: 970-669-3050
Fax: 970-461-3939
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www.hach-lange.com

LIT2470 Rev 2
Printed in U.S.A.

HACH®
Be Right™

95-Gallon OverPack Salvage Drum #A95OVER - 32" dia x 41.5", 1 each/package

Stock a SpillTech® OverPack with sorbents for emergency spill response, or use it as a salvage drum to ship damaged containers or hazardous waste.

- DOT-Approved for Salvage: All SpillTech® OverPacks are DOT-approved and X-rated for use as salvage drums. Helps companies conform to federal regulations when shipping damaged or leaking containers of hazardous materials, or absorbents contaminated with hazardous substances.
- Perfect for Spill Kits: Stores sorbent products (not included) for easy access as needed for spill control. Saves time when quick response is necessary.
- Sturdy Construction: 100% polyethylene OverPack resists chemicals, rust and corrosion for years of use. Integrated handles make them easy to lift, move or carry with standard material handling equipment. Twist-on, double-wall lid with closed-cell gasket provides sealed, secure closure to prevent leaks and protect contents from moisture, dirt and damage. Durable to withstand rough handling.
- Customized for You: We can customize a Spill Kit to your exact specifications, including the container, its contents and accessories, with no upcharge! Contact your local Distributor for details.

A95OVER Specifications

Dimensions:	ext. dia. 32" x 41.5" H
Shipping Dimensions:	31.75" W x 41.5" L x 31.75" H
Sold as:	1 per package
Color:	Yellow
Composition:	Polyethylene
Weight:	48 lbs.
# per Pallet:	3
Incinerable:	No
UN RATING:	1H2/X295/S
Ship Class:	250

Metric Equivalent Specifications

Dimensions:	ext. dia. 81.3cm x 105.4cm H
Shipping Dimensions:	80.6cm W x 105.4cm L x 80.6cm H
Weight:	21.8 kg

Online: **spilltech.com**

Phone: **1-800-228-3877 (N.Am.)** **1-770-475-3877 (Other)**

Fax: **1-800-872-3764 (N.Am.)** **1-770-410-1812 (Other)**

Email: **sales@spilltech.com**

6455 East Johns Crossing, Suite 375 • Johns Creek GA 30097

A95OVER Technical Information

Warnings & Restrictions:
There are no known warnings and restrictions for this product.

Regulations and Compliance:
49 CFR 173.3(c)(1) - If a container of hazardous waste is damaged or leaking, it can be placed in a compatible salvage drum that meets UN criteria for shipping

49 CFR 173.12(b)(2)(iv) - When labpacking, "Inner packagings…must be surrounded by a chemically compatible absorbent material in sufficient quantity to absorb the total liquid contents."

49 CFR 173.12(b) - A container used for labpacking must be "a UN 1A2 or UN 1B2 metal drum, a UN 1D plywood drum, a UN 1G fiber drum or a UN 1H2 plastic drum tested and marked at least for the Packing Group III performance level for liquids or solids."

Technical Documents:
(Available at **spilltech.com**)

Product Data Sheet (PDS)

Chemical Compatibility (CCG)

SAFETY DATA SHEET

Creation Date 12-Nov-2010 **Revision Date** 24-May-2017 **Revision Number** 5

1. Identification

Product Name **Sulfuric Acid (Certified ACS Plus)**

Cat No. : **A300-212; A300-225LB; A300-500; A300-612GAL; A300-700LB; A300C212; A300C212EA; A300P500; A300S212; A300S212EA; A300S500; A300SI212**

Synonyms Hydrogen sulfate; Vitriol brown oil; Oil of vitriol

Recommended Use Laboratory chemicals.
Uses advised against Not for food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin Corrosion/irritation	Category 1 A
Serious Eye Damage/Eye Irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system.	

Label Elements

Signal Word
Danger

Hazard Statements
Causes severe skin burns and eye damage
May cause respiratory irritation

Precautionary Statements
Prevention
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Wash face, hands and any exposed skin thoroughly after handling
Use only outdoors or in a well-ventilated area
Response
Immediately call a POISON CENTER or doctor/physician
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Skin
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Ingestion
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)

WARNING! This product contains a chemical known in the State of California to cause cancer.
Unknown Acute Toxicity

3. Composition / information on ingredients

Component	CAS-No	Weight %
Sulfuric acid	7664-93-9	90 - 98
Water	7732-18-5	2 - 10

4. First-aid measures

General Advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing before re-use. Call a physician immediately.

Inhalation If not breathing, give artificial respiration. Remove from exposure, lie down. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician immediately.

Ingestion Do not induce vomiting. Clean mouth with water. Never give anything by mouth to an unconscious person. Call a physician immediately.

Most important symptoms/effects Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media CO_2, dry chemical, dry sand, alcohol-resistant foam.

Unsuitable Extinguishing Media DO NOT USE WATER

Flash Point Not applicable
Method - No information available

Autoignition Temperature No information available
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes.

Hazardous Combustion Products
Sulfur oxides Hydrogen
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health	Flammability	Instability	Physical hazards
3	0	2	W

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental Precautions Should not be released into the environment.

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe vapors or spray mist. Do not ingest.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from water. Corrosives area.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Sulfuric acid	TWA: 0.2 mg/m³	(Vacated) TWA: 1 mg/m³ TWA: 1 mg/m³	IDLH: 15 mg/m³ TWA: 1 mg/m³	TWA: 1 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Long sleeved clothing.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Clear, Colorless to brown
Odor	Odorless
Odor Threshold	No information available
pH	0.3 (1N)
Melting Point/Range	10 °C / 50 °F
Boiling Point/Range	290 - 338 °C / 554 - 640.4 °F
Flash Point	Not applicable
Evaporation Rate	Slower than ether
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	< 0.001 mmHg @ 20 °C
Vapor Density	3.38 (Air = 1.0)
Specific Gravity	1.84
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	340°C
Viscosity	No information available
Molecular Formula	H2SO4
Molecular Weight	98.08

10. Stability and reactivity

Reactive Hazard Yes

Stability Reacts violently with water. Hygroscopic.

Conditions to Avoid Incompatible products. Excess heat. Exposure to moist air or water.

Incompatible Materials Water, Organic materials, Strong acids, Strong bases, Metals, Alcohols, Cyanides, Sulfides

Hazardous Decomposition Products Sulfur oxides, Hydrogen

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Oral LD50 Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Dermal LD50 Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Vapor LC50 Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sulfuric acid	2140 mg/kg (Rat)	Not listed	LC50 = 510 mg/m³ (Rat) 2 h
Water	-	Not listed	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Causes severe burns by all exposure routes

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen. Exposure to strong inorganic mists containing sulfuric acid may cause cancer by inhalation.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Sulfuric acid	7664-93-9	Group 1	Known	A2	X	A2
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed

IARC: (International Agency for Research on Cancer)

IARC: (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2A - Probably Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

NTP: (National Toxicity Program)
Known - Known Carcinogen
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
ACGIH: (American Conference of Governmental Industrial Hygienists)

Mexico - Occupational Exposure Limits - Carcinogens

Mexico - Occupational Exposure Limits - Carcinogens
A1 - Confirmed Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Confirmed Animal Carcinogen
A4 - Not Classifiable as a Human Carcinogen
A5 - Not Suspected as a Human Carcinogen

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Respiratory system

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

This product contains the following substance(s) which are hazardous for the environment. .

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Sulfuric acid	-	LC50: > 500 mg/L, 96h static (Brachydanio rerio)	-	EC50: 29 mg/L/24h

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available.

Mobility No information available.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN1830
Proper Shipping Name Sulfuric acid
Hazard Class 8
Packing Group II

TDG

UN-No UN1830
Proper Shipping Name SULFURIC ACID
Hazard Class 8
Packing Group II

IATA

UN-No UN1830
Proper Shipping Name SULFURIC ACID
Hazard Class 8
Packing Group II

IMDG/IMO

UN-No UN1830
Proper Shipping Name SULFURIC ACID
Hazard Class 8
Packing Group II

15. Regulatory information

All of the components in the product are on the following Inventory lists: X = listed

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Sulfuric acid	X	X	-	231-639-5	-		X	X	X	X	X
Water	X	X	-	231-791-2	-		X	-	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Sulfuric acid	7664-93-9	90 - 98	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	Yes

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Sulfuric acid	X	1000 lb	-	-

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Sulfuric acid	1000 lb	1000 lb

California Proposition 65 This product contains the following proposition 65 chemicals

Component	CAS-No	California Prop. 65	Prop 65 NSRL	Category
Sulfuric acid	7664-93-9	Carcinogen	-	Carcinogen

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Sulfuric acid	X	X	X	X	X
Water	-	-	X	-	-

U.S. Department of Transportation

Reportable Quantity (RQ):	Y
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 12-Nov-2010
Revision Date 24-May-2017
Print Date 24-May-2017
Revision Summary SDS sections updated. 2.

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS

PULSAFEEDER®

The Pulsatron Series A Plus offers manual function controls over stroke length and stroke rate as standard with the option to select external pace for automatic control.

Ten distinct models are available, having pressure capabilities to 250 PSIG (17 BAR) @ 12 GPD (1.9 lph), and flow capacities to 58 GPD (9.1 lph) @ 100 PSIG (7.0 BAR), with a standard turndown ratio of 100:1, and optional ratio of 1000:1. Metering performance is reproducible to within ± 3% of maximum capacity.

Features

- Manual Control by on-line adjustable stroke rate and stroke length.
- Highly Reliable timing circuit.
- Circuit Protection against voltage and current upsets.
- Solenoid Protection by thermal overload with auto-reset.
- Water Resistant, for outdoor and indoor applications.
- Internally Dampened To Reduce Noise.
- Guided Ball Check Valve Systems, to reduce back flow and enhance outstanding priming characteristics.
- Few Moving Parts and Wall Mountable.
- Safe & Easy Priming with durable leak-free bleed valve assembly (standard).
- Optional Control: External pace with auto/manual selection.

Operating Benefits

- Reliable metering performance.
- Rated “hot” for continuous duty.
- High viscosity capability.
- Leak-free, sealless, liquid end.

Controls

Manual Stroke Rate

Manual Stroke Length

External Pacing - Optional

External Pace With Stop - Optional (125 SPM only)

Controls Options		
Feature	Standard Configuration	Optional Configuration [1]
External Pacing	—	Auto / Manual Selection [2]
External Pace w/ Stop (125 SPM only)	—	Auto / Manual Selection [2]
Manual Stroke Rate	10:1 Ratio	100:1 Ratio
Manual Stroke Length	10:1 Ratio	10:1 Ratio
Total Turndown Ratio	100:1 Ratio	1000:1 Ratio

Note 1: On S2, S3 & S4 sizes only.

Note 2: Not available on 1000:1 turndown pumps.

1. Tested and Certified by WQA against NSF/ANSI 61 & 372

1. PVDF and Degassing Head Pumps
See www.wqa.org for certification parameters.

Aftermarket

- KOPkits
- Gauges
- Dampeners
- Pressure Relief Valves
- Tanks
- Pre-Engineered Systems
- Process Controllers (MicroVision)

PULSAtron® Series A Plus Electronic Metering Pumps

PULSAtron® Series A Plus

Specifications and Model Selection

MODEL			LBC2	LB02	LBC3	LB03	LB04	LB64	LBC4	LBS2	LBS3	LBS4
Capacity nominal (max.)		GPH	0.25	0.25	0.42	0.50	1.00	1.25	2.00	0.50	1.38	2.42
		GPD	6	6	10	12	24	30	48	12	33	58
		LPH	0.9	0.9	1.6	1.9	3.8	4.7	7.6	1.9	5.2	9.14
Pressure[3] (max.)	GFPP, PVDF, 316SS or PVC (W code) w/TFE Seats)	PSIG (Bar)	250 (17)	150 (10)	250 (17)	150 (10)	100 (7)	100 (7)	50 (3.3)	250 (17)	150 (10)	100 (7)
	PVC (V code) Viton or CSPE Seats / Degas Liquid End		150 (10)							150 (10)		
Connections:		Tubing	1/4" ID X 3/8" OD						3/8" ID X 1/2" OD	1/4" ID X 3/8" OD		
		Piping	1/4" FNPT									
Strokes/Minute		SPM	125							250		

Note 3: Pumps with rated pressure above 150 PSI will be de-rated to 150 PSI Max. when selecting certain valve options, see Price Book for details.

Engineering Data

Pump Head Materials Available: GFPPL, PVC, PVDF, 316 SS

Diaphragm: PTFE-faced CSPE-backed

Check Valves Materials Available:

Seats/O-Rings: PTFE, CSPE, Viton

Balls: Ceramic, PTFE, 316 SS, Alloy C

Fittings Materials Available: GFPPL, PVC, PVDF

Bleed Valve: Same as fitting and check valve selected, except 316SS

Injection Valve & Foot Valve Assy: Same as fitting and check valve selected

Tubing: Clear PVC, White PE

Important: Material Code - GFPPL=Glass-filled Polypropylene, PVC=Polyvinyl Chloride, PE=Polyethylene, PVDF=Polyvinylidene Fluoride, CSPE=Generic formulation of Hypalon, a registered trademark of E.I. DuPont Company. Viton is a registered trademark of E.I. DuPont Company. PVC wetted end recommended for sodium hypochlorite.

Engineering Data

Reproducibility: +/- 3% at maximum capacity

Viscosity Max CPS: 1000 CPS

Stroke Frequency Max SPM: 125 / 250 by Model

Stroke Frequency Turn-Down Ratio: 10:1 /100:1 by Model

Stroke Length Turn-Down Ratio: 10:1

Power Input: 115 VAC/50-60 HZ/1 ph, 230 VAC/50-60 HZ/1 ph

Average Current Draw:

@ 115 VAC; Amps: 0.6 Amps

@ 230 VAC; Amps: 0.3 Amps

Peak Input Power: 130 Watts

Average Input Power @ Max SPM: 50 Watts

Custom Engineered Designs – Pre-Engineered Systems

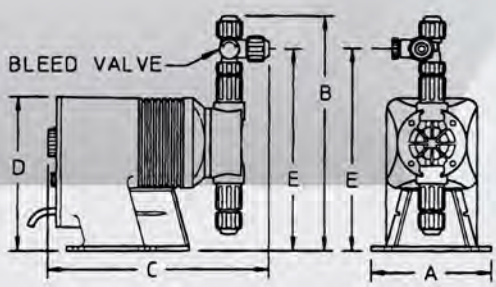
Pre-Engineered Systems

Pulsafeeder's Pre-Engineered Systems are designed to provide complete chemical feed solutions for all electronic metering applications. From stand alone simplex pH control applications to full-featured, redundant sodium hypochlorite disinfection metering, these rugged fabricated assemblies offer turn-key simplicity and industrial-grade durability. The UV-stabilized, high-grade HDPE frame offers maximum chemical compatibility and structural rigidity. Each system is factory assembled and hydrostatically tested prior to shipment.

Dimensions

Series A PLUS Dimensions (inches)						
Model No.	A	B	C	D	E	Shipping Weight
LB02 / S2	5.0	9.6	9.5	6.5	8.2	10
LBC2	5.0	9.9	9.5	6.5	8.5	10
LBC3	5.0	9.9	9.5	6.5	8.5	10
LB03 / S3	5.0	9.9	9.5	6.5	8.5	10
LB04 /S4	5.0	9.9	9.5	6.5	8.5	10
LB64	5.0	9.9	9.5	6.5	8.5	10
LBC4	5.0	9.9	9.5	6.5	8.5	10

NOTE: Inches X 2.54 = cm



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www.pulsatron.com

An ISO 9001 Certified Company

IDEX

Applied Polymer Systems

519 Industrial Drive, Woodstock, GA 30189
www.siltstop.com
Phone: 678-494-5998
Toll-free: 866-200-9868
Fax: 678-494-5298

APS 700 Series Floc Logs®

Polyacrylamide Sediment and Turbidity Control Applicator Logs

APS 700 Series Floc Logs are a group of soil-specific tailored log-blocks that contain blends of water treatment components and polyacrylamide co-polymer for water clarification. They reduce and prevent fine particles and colloidal clays from suspension in stormwater. There are several types of Floc Logs designed to treat most water and soil types. Contact Applied Polymer Systems, Inc. or your local distributor for free testing and site-specific application information.

Primary Applications

- Mine tailings and waste pile ditches
- Stormwater drainage from construction and building sites
- Road and highway construction runoff ditches
- Ditch and treatment system placement for all forms of highly turbid waters (less than 4% solids)
- Dredging operations as a flocculent

Features and Benefits

- Removes solubilized soils and clay from water
- Prevents colloidal solutions in water within ditch systems
- Binds cationic metals within water, reducing solubilization
- Binds pesticides and fertilizers within runoff water
- Reduces operational and cleanup costs
- Reduces environmental risks and helps meet compliance

Specifications / Compliances

- ANSI/NSF Standard 60 Drinking water treatment chemical additives
- 48h or 96h Acute Toxicity Tests (*D. magna* or *O. mykiss*)
- 7 Day Chronic Toxicity Tests *(P. promealas* or *C. dubia*

Packaging

APS 700 Series Floc Logs are packaged in boxes of four (4)

Technical Information

Appearance - semi-solid block
Biodegradable internal coconut skeleton
Percent Moisture - 40% maximum
pH 0.5% Solution - 6-8
Shelf Life – up to 5 years when stored out of UV rays

Applied Polymer Systems

519 Industrial Drive, Woodstock, GA 30189
www.siltstop.com
Phone: 678-494-5998
Toll-free: 866-200-9868
Fax: 678-494-5298

Placement

Floc Logs are designed for placement within ditches averaging three feet wide by two feet deep. Floc log placement is based on gallon per minute flow rates. Note: actual GPM or dosage will vary based on site criteria and soil/water testing.

Directions for Use

(Water and Floc Log Mixing is Very Important!)

APS 700 Series Floc Logs should be placed within the upper quarter to half of a *stabilized* ditch system or as close as possible to active earth moving activities. Floc Logs have built in ropes with attachment loops which can be looped over stakes to ensure they remain where placed. Mixing is key! If the flow rate is too slow, adding sand bags, cinder blocks, etc., can create the turbulence required for proper mixing. Floc Logs are designed to treat dirty water, not liquid mud; when the water contains heavy solids (exceeding 4%), it will be necessary to create a sediment or grit pit to let the heavy solids settle before treating the water.

Floc Logs must not be placed in areas where heavy erosion would result in the Floc Logs becoming buried. Where there is heavy sedimentation, maintenance will be required.

APS 700 Series Floc Logs can easily be moved to different locations as site conditions change. Water quality will be improved with the addition of a dispersion field or soft armor covered ditch checks below the Floc Log(s) to collect flocculated particulate. Construction of mixing weirs may be required in areas where short ditch lines, swelling clays, heavy particle concentrations, or steep slopes may be encountered.

Cleanup:

Latex or rubber gloves are recommended for handling during usage. Use soap and water to wash hands after handling.

Precautions / Limitations

- APS 700 Series Floc Logs are extremely slippery when wet.
- Clean up spills quickly. Do not use water unless necessary as extremely slippery conditions will result and if water is necessary, use pressure washer.
- APS Floc Log will remain viable for up to 5 years when stored out of UV rays.
- APS 700 Series Floc Logs have been specifically tailored to specific water and soil types and samples must be tested. Testing is necessary and is free.
- For product information, treatment system design assistance, or performance issues, contact Applied Polymer Systems.

APPENDIX E

Endangered Species Act Assessment

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: June 02, 2021
Consultation Code: 05E1NE00-2021-SLI-3694
Event Code: 05E1NE00-2021-E-11045
Project Name: 74 Middlesex Avenue

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:

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

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

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

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

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

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

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

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

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

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

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

Project Summary

Consultation Code: 05E1NE00-2021-SLI-3694
Event Code: 05E1NE00-2021-E-11045
Project Name: 74 Middlesex Avenue
Project Type: DEVELOPMENT
Project Description: Proposed laboratory building.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.39329295,-71.08370950685946,14z

Counties: Middlesex County, Massachusetts

Endangered Species Act Species

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

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

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

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

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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.

Critical habitats

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

MassDEP - Bureau of Waste Site Cleanup

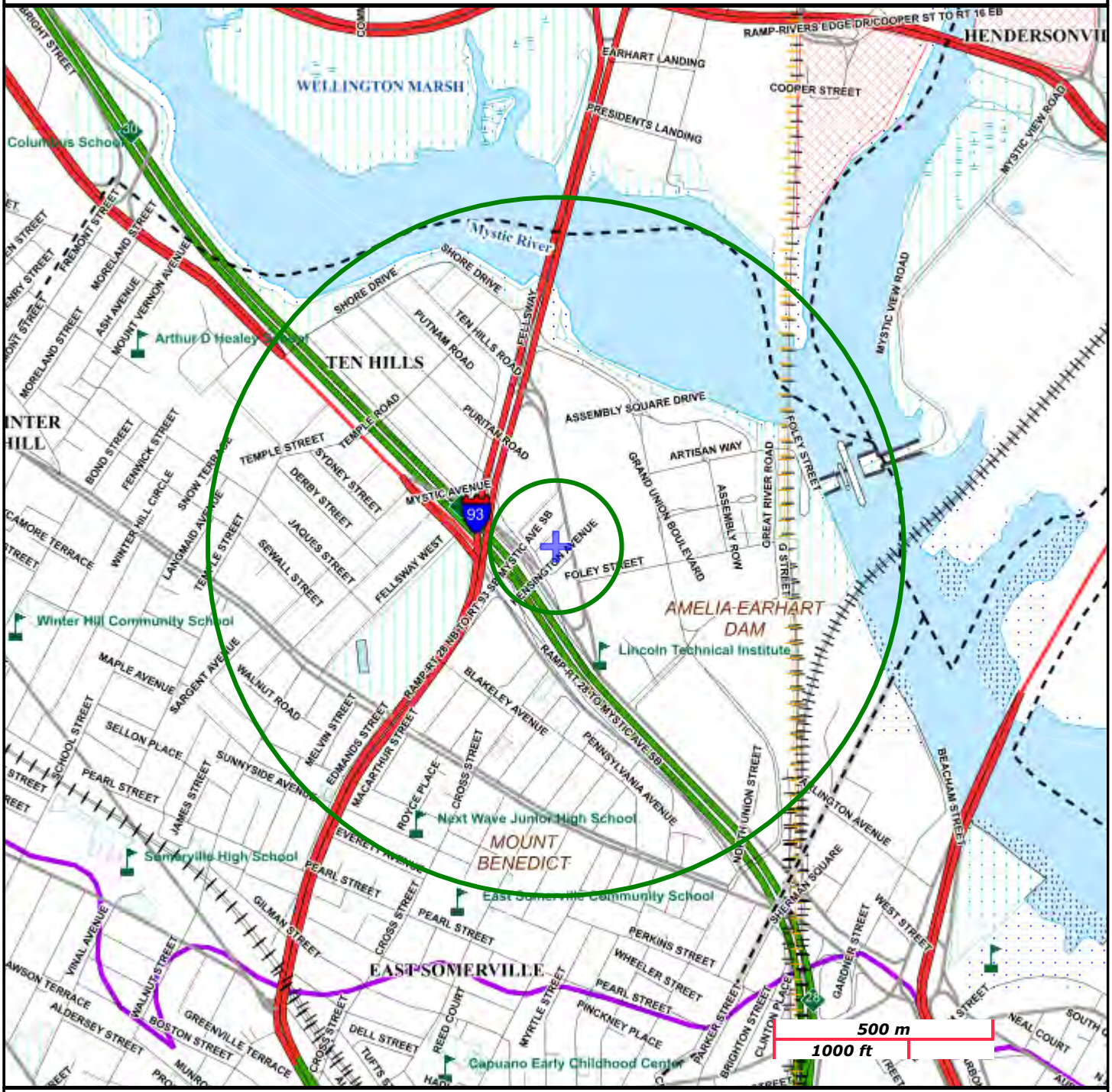
Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

Site Information:
74 MIDDLESEX AVENUE
74 MIDDLESEX AVENUE SOMERVILLE, MA

NAD83 UTM Meters:
4695552mN , 328498mE (Zone: 19)
June 2, 2021

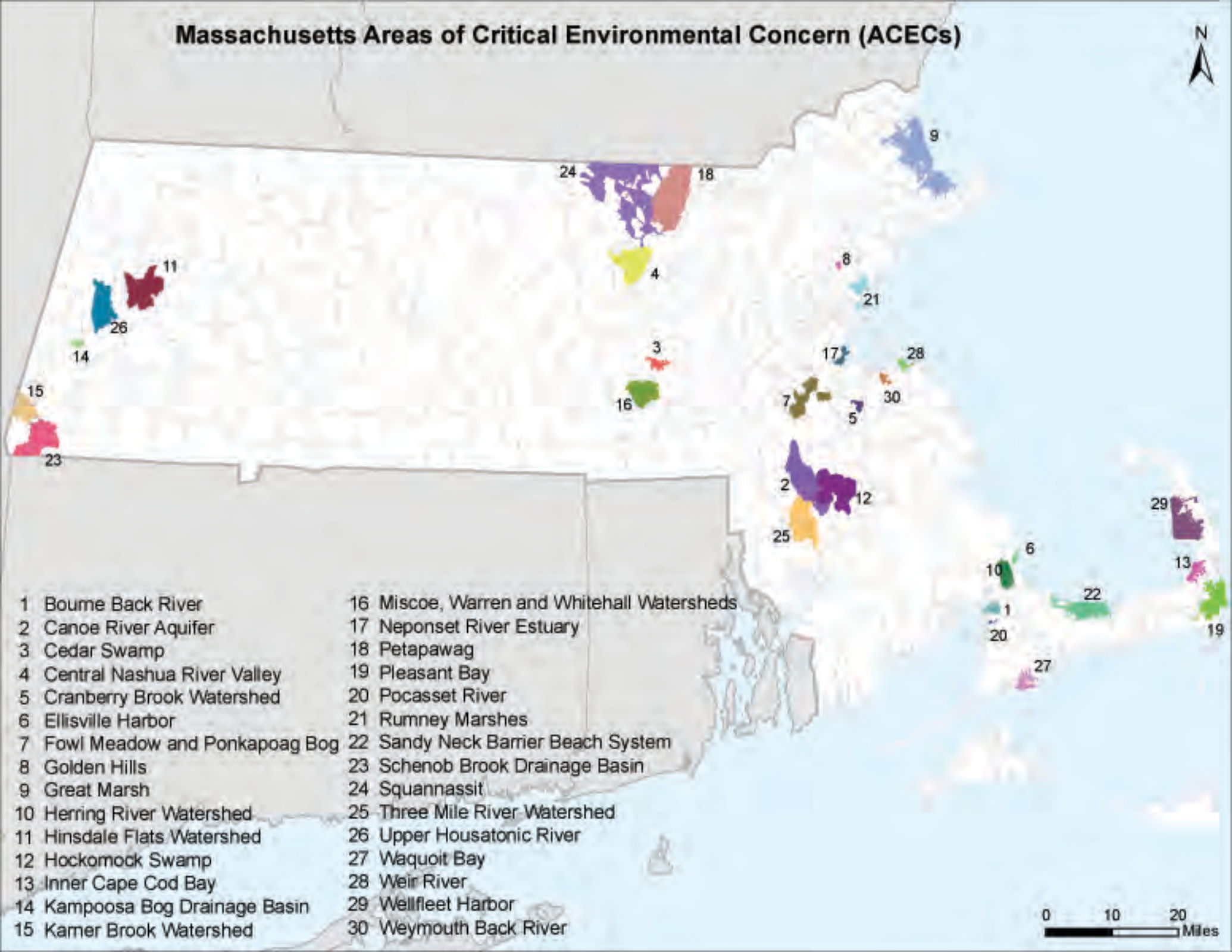
The information shown is the best available at the date of printing. However, it may be incomplete. The responsible party and LSP are ultimately responsible for ascertaining the true conditions surrounding the site. Metadata for data layers shown on this map can be found at: https://www.mass.gov/orgs/massgis-bureau-of-geographic-information.

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.

Massachusetts Areas of Critical Environmental Concern (ACECs)



1 Bourne Back River
2 Canoe River Aquifer
3 Cedar Swamp
4 Central Nashua River Valley
5 Cranberry Brook Watershed
6 Ellisville Harbor
7 Fowl Meadow and Ponkapoag Bog
8 Golden Hills
9 Great Marsh
10 Herring River Watershed
11 Hinsdale Flats Watershed
12 Hockomock Swamp
13 Inner Cape Cod Bay
14 Kampoosa Bog Drainage Basin
15 Karner Brook Watershed
16 Miscoe, Warren and Whitehall Watersheds
17 Neponset River Estuary
18 Petapawag
19 Pleasant Bay
20 Pocasset River
21 Rumney Marshes
22 Sandy Neck Barrier Beach System
23 Schenob Brook Drainage Basin
24 Squannassit
25 Three Mile River Watershed
26 Upper Housatonic River
27 Waquoit Bay
28 Weir River
29 Wellfleet Harbor
30 Weymouth Back River

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Barnstable	Piping Plover	Threatened	Coastal Beaches	All Towns
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Chatham
	Sandplain gerardia	Endangered	Open areas with sandy soils.	Sandwich and Falmouth.
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Bourne (north of the Cape Cod Canal)
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Berkshire	Bog Turtle	Threatened	Wetlands	Egremont and Sheffield
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Bristol	Piping Plover	Threatened	Coastal Beaches	Fairhaven, Dartmouth, Westport
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Fairhaven, New Bedford, Dartmouth, Westport
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Taunton
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Dukes	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Piping Plover	Threatened	Coastal Beaches	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Aquinnah and Chilmark
	Sandplain gerardia	Endangered	Open areas with sandy soils.	West Tisbury
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

Updated 02/05/2016

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Essex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Gloucester, Essex and Manchester
	Piping Plover	Threatened	Coastal Beaches	Gloucester, Essex, Ipswich, Rowley, Revere, Newbury, Newburyport and Salisbury
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Franklin	Northeastern bulrush	Endangered	Wetlands	Montague, Warwick
	Dwarf wedgemussel	Endangered	Mill River	Whately
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Hampshire	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Hadley
	Puritan tiger beetle	Threatened	Sandy beaches along the Connecticut River	Northampton and Hadley
	Dwarf wedgemussel	Endangered	Rivers and Streams.	Hatfield, Amherst and Northampton
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Hampden	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Southwick
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Middlesex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Groton
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Nantucket	Piping Plover	Threatened	Coastal Beaches	Nantucket
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Nantucket
	American burying beetle	Endangered	Upland grassy meadows	Nantucket
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

Updated 02/05/2016

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Plymouth	Piping Plover	Threatened	Coastal Beaches	Scituate, Marshfield, Duxbury, Plymouth, Wareham and Mattapoisett
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Kingston, Middleborough, Carver, Plymouth, Bourne, Wareham, Halifax, and Pembroke
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Plymouth, Marion, Wareham, and Mattapoisett.
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Suffolk	Piping Plover	Threatened	Coastal Beaches	Revere, Winthrop
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Worcester	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Leominster
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

[1]Migratory only, scattered along the coast in small numbers

-Eastern cougar and gray wolf are considered extirpated in Massachusetts.
-Endangered gray wolves are not known to be present in Massachusetts, but dispersing individuals from source populations in Canada may occur statewide.
-Critical habitat for the Northern Red-bellied Cooter is present in Plymouth County.

Updated 02/05/2016

IPaC **U.S. Fish & Wildlife Service**

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

Middlesex 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.

THERE ARE NO ENDANGERED SPECIES EXPECTED TO OCCUR 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*
Breeds Oct 15 to Aug 31
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

Black-billed Cuckoo *Coccyzus erythropthalmus*
Breeds May 15 to Oct 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9399

Bobolink *Dolichonyx oryzivorus*
Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Canada Warbler *Cardellina canadensis*
Breeds May 20 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Cerulean Warbler *Dendroica cerulea*
Breeds Apr 29 to Jul 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/2974

Dunlin *Calidris alpina arcticola*
Breeds elsewhere
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Evening Grosbeak *Coccothraustes vespertinus*
Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Kentucky Warbler *Oporornis formosus*
Breeds Apr 20 to Aug 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Lesser Yellowlegs *Tringa flavipes*
Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9679

Nelson's Sparrow Ammodramus nelsoni — Breeds May 15 to Sep 5
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Prairie Warbler Dendroica discolor — Breeds May 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Prothonotary Warbler Protonotaria citrea — Breeds Apr 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Red-headed Woodpecker Melanerpes erythrocephalus — Breeds May 10 to Sep 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Red-throated Loon Gavia stellata — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Rusty Blackbird Euphagus carolinus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Semipalmated Sandpiper Calidris pusilla — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Snowy Owl Bubo scandiacus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wood Thrush Hylocichla mustelina — Breeds May 10 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

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.

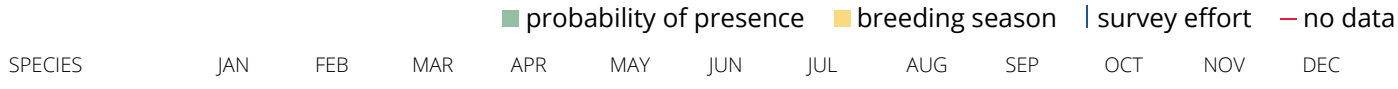
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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.

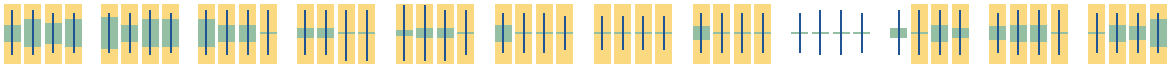
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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

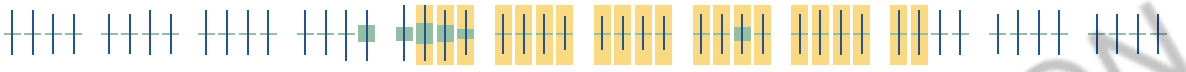
Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



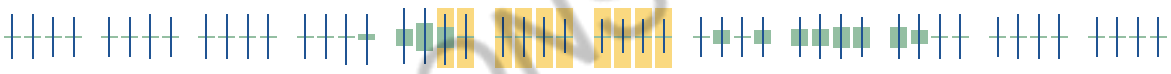
Bald Eagle
Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



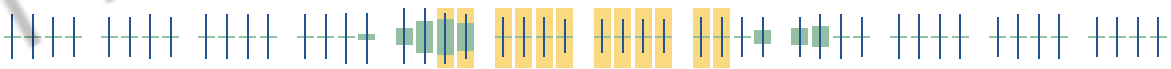
Black-billed Cuckoo
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



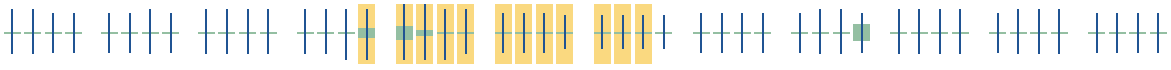
Bobolink
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



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



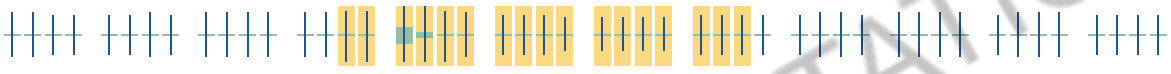
Cerulean Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



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

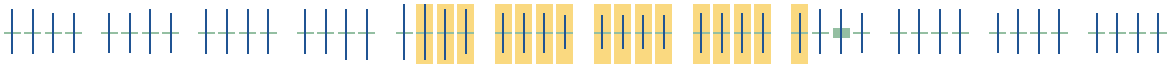
Evening Grosbeak BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

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.)

Nelson's Sparrow 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.)

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

SPECIES JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

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

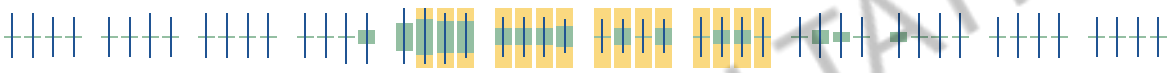
Red-throated Loon BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

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

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

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

Wood Thrush 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.

Rare species viewer

Town	Common Name	Scientific Name	Taxonomic Group	MESA Status	Most Recent Obs.
SOMERVILLE	Common Tern	Sterna hirundo	Bird	Special Concern	2017

List provided by Mass.gov (https://www.mass.gov/service-details/rare-species-viewer), accessed 6/2/2021.

APPENDIX F

National Historical Preservation Act Review

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Street No: 74; Street Name: Middlesex ave; Resource Type(s): ü, Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Somerville; Street No: 845; Street Name: McGrath Hwy; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year