HALEY & ALDRICH, INC.
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24 October 2017
Revised 27 October 2017
File No. 36514-706

US Environmental Protection Agency
Office of Ecosystem Protection
5 Post Office Square – Suite 100 (OEP06-01)
Boston, MA 02109-3912

Attention: EPA/OEP RGP Applications Coordinator

Subject: Notice of Intent (NOI)
Temporary Construction Dewatering
MIT.nano Project – Phase 3: North Corridor
Cambridge, Massachusetts

Dear Ms. Little:

On behalf of our client, Massachusetts Institute of Technology (MIT), and in accordance with the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) in Massachusetts, MAG910000, this letter submits a Notice of Intent (NOI) and the applicable documentation as required by the US Environmental Protection Agency (EPA) for temporary construction site dewatering under the RGP. Haley & Aldrich, Inc. (Haley & Aldrich) has prepared this submission to facilitate off-site discharge of temporary dewatering during the installation of utilities, landscaping and surface treatment activities for the third phase of the MIT.nano Project, located in Cambridge, Massachusetts as shown on Figure 1. The third phase of the MIT.nano project is referred to as the "North Corridor".

Permission to discharge under the NPDES RGP (Authorization # MAG910620) was previously obtained for the in June 2014 for the first two construction phases of the project. Copies of the 2014 approval letters are included in Appendix A. Data from monthly influent and effluent samples collected from the previous dewatering systems under authorization #MAG910620 is summarized in Table 2.

GENERAL SITE DESCRIPTION

Site Location

The Site is located on the MIT north campus and is currently an active construction site for installation of new utilities in existing paved and landscaped areas. The North Corridor phase involves installation of new utilities within the general area of the new MIT.nano building (Building 28).

Historical Site Usage

Historical maps indicate the area of land now occupied by the MIT campus was previously marshland in the Charles River Basin. Plans to fill and develop this portion of the marshland began as early as 1840 with the acquisition of titles to the land and culminated in 1881 with the incorporation of the Charles River Embankment Company, created to combine several private interests in developing the land. Site filling began with the construction of a portion of a granite sea wall in 1883. Historical reports indicate the material used for site filling consisted primarily of silt with sand and frequently containing shells, dredged from the bed of the Charles River. Additionally, sand, gravel, ashes and other city waste were used for filling. By 1899, filling of the entire future MIT campus had been completed. MIT purchased the land in 1912 and began construction of the main campus buildings in 1913. Construction of the main campus buildings was completed by 1916 at which time the school moved across the Charles River from its original Back Bay campus location.

MassDEP Regulatory Background

On 9 June 2014, verbal notification was provided to the MassDEP by Haley & Aldrich, Inc. on behalf of MIT for concentrations of oils and hazardous materials detected in the Site soils above applicable RCS-1 Reportable Concentrations. As a result, Release Tracking Number (RTN) 3-32224 was assigned to the release. A Release Notification Form (RNF) was submitted to MassDEP on 07 August 2014. Planned soil and groundwater management at the site is being conducted under a Utility-Related Abatement Measure (URAM) Plan submitted to MassDEP on 17 June 2014. Contaminants of concern consist of primarily heavy metals (arsenic and lead) and polycyclic aromatic hydrocarbons (PAHs).

GROUNDWATER QUALITY DATA

Previous Groundwater Quality Data

Groundwater analytical data was obtained by Haley & Aldrich, Inc. during sampling events in February and March of 2014. Observation wells HA14-B4, HA14-B5, and HA14-B6 were sampled for EPA 2010 NPDES Remediation General Permit (RGP) permit parameters. The data are included in the attached Table I, and the sampling locations are shown on Figure 2.

Recent Groundwater Quality Data

One groundwater sample was obtained from observation well HA14-B8 (OW) in August 2017. The collected sample was submitted to Alpha Analytical Laboratory (Alpha) of Westborough, MA, for chemical analysis of 2017 NPDES Remediation General Permit parameters including VOCs, SVOCs, PAHs, total metals, TPH, pesticides, PCBs, total suspended solids (TSS), chloride, total cyanide, total phenolics, and total residual chlorine.

Refer to Table I for a summary of groundwater analytical data. The recent groundwater analyses did not detect concentrations of chemical constituents above applicable MCP reportable concentrations or NPDES RGP discharge criteria. The construction dewatering effluent at the Site will be managed under a Remediation General Permit. The location of the observation well HA14-B8 (OW) is shown on Figure 2.

Receiving Water Quality Information and Dilution Factor

The receiving water is the Charles River Basin which flows to the east. Receiving water quality data, collected by Haley & Aldrich on 7 June 2017, was used in support of this NOI. The sample, designated at 2017-0607-Charles River, was submitted to Alpha for analysis of hardness, total metals, and ammonia. Receiving water temperature and pH was obtained in the field and is noted on the effluent limitations input calculation page in Appendix C. The sample was collected approximately 0.5 miles downstream of Outfall D08OF0010. The approximate location of receiving water sample is shown on Figure 3.

The seven day-ten-year flow (7Q10) of the receiving water was established using the U.S. Geological Survey (USGS) StreamStats program and confirmed by Massachusetts Department of Environmental Protection (MassDEP) on 12 September 2017. The StreamStats Report, Dilution Factor calculations, and MassDEP confirmation of the 7Q10 and DF are included in Appendix C.

Copies of the "EnterData" and "FreshwaterResults" tabs from the excel file provided as an additional resource by EPA are included in Appendix C. The effluent limitations calculated are included for reference in Table I.

Dewatering System and Off-site Discharge

Dewatering will be conducted from sumps or well points located inside the excavations. Dewatering is currently anticipated to begin in October 2017 and is anticipated to be required for up to 12 months. On average, we estimate effluent discharge rates of about 25 gallons per minute (gpm), with occasional peak flows of approximately 150 gpm during significant precipitation events. Temporary dewatering will be conducted from sumps located in excavations or from dewatering wells installed at the site.

Prior to discharge, collected watering will be routed through a sedimentation tank and bag filter, at a minimum, to remove suspended solids and undissolved chemical constituents associated with the fill soils (metals and PAHs), as shown in the Proposed Treatment System Schematic included in Figure 4 herein. Construction dewatering under this RGP NOI will include piping and discharging to storm drains located within and near the site. The storm drains travel a short distance south and or south west and discharge directly into the Charles River. The proposed discharge route is shown on Figure 2, Proposed Dewatering Discharge Route.

It should be noted that two outfall locations on the Charles River are proposed. One is operated by the City of Cambridge and the other is a private discharge operated by MIT. The MIT discharge has been utilized by MIT for over 100 years. This discharge has been permitted in the past for a number of uses including non-contact cooling water but currently is only utilized for stormwater discharge. This outfall location to the Charles River and it is not currently regulated under State or Federal Regulations. Included in the attached Appendix C is a 1972 plan indicating the discharge location.

DOCUMENTATION OF NATIONAL HISTORIC PRESERVATION ACT ELIGIBILITY REQUIREMENTS

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

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 G. Based on the results of the determination, the project and action area are considered to meet FWS Criterion A as no listed species or critical habitat have been established to be present within the project action area.

SUPPLEMENTAL INFORMATION

Owner and Operator Information

Owner:
Massachusetts Institute of Technology
77 Massachusetts Avenue
Building N52- 496
Cambridge, Massachusetts 02139-4307
Contact: Phyllis Carter

Operator:
Turner Construction Company
2 Seaport Lane
Boston, Massachusetts 02210
Contact: Dick Williamson

Appendices

The completed "Suggested Notice of Intent" (NOI) form as provided in the RGP is enclosed in Appendix B. The site operator is Turner Construction Company (Turner). Turner is the construction manager and will hire a subcontractor to conduct the Site work, including the dewatering activities. Haley & Aldrich, Inc. (Haley & Aldrich) will monitor the Contractor's dewatering activities on behalf of MIT. In accordance with the requirements for this NOI submission, MIT as owner and Turner as the construction manager are listed as co-permittees for this NPDES RGP, and therefore both have signed the NOI form.

Discharge calculations to determine the dilution factor based on 7-day 10-year low flow values are included in Appendix C. Appendix D provides the City of Cambridge Permit Application to be submitted separately to the City of Cambridge DPW. A Best Management Practices Plan (BMPP), which outlines the proposed discharge operations covered under the RGP, is included in Appendix E. Appendices F and G include the National Register of Historic Places and Endangered Species Act Documentation, respectively. Copies of the groundwater testing laboratory results are provided in Appendix H.

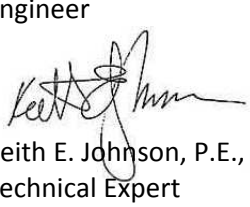
CLOSING

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.

Grace Daylor, E.I.T.
Engineer

Todd R. Butler, P.E.
Project Manager



Keith E. Johnson, P.E., LSP
Technical Expert

Attachments:

Table I – Summary of Groundwater Quality Data
Table 2 – Summary of Historic Groundwater Quality Data from Previous Dewatering Systems
Figure 1 – Site Locus
Figure 2 – Proposed Dewatering Discharge Routes
Figure 3 – Receiving Water Sampling Location Plan
Figure 4 – Proposed Treatment System Schematic

Appendix A – 2014 Approval Letters
Appendix B – Notice of Intent (NOI) for Remediation General Permit (RGP)
Appendix C – Discharge Calculations
Appendix D – Permits
Appendix E – Best Management Practices Plan (BMPP)
Appendix F – National Register of Historic Places and Massachusetts Historical Commission Documentation
Appendix G – Endangered Species Act Documentation
Appendix H – Laboratory Data Reports
Appendix I – Chemicals and Additives

c: MIT Facilities: Travis Wanat
MIT EH&S: Phyllis Carter
Turner Construction Co.: Peter Johnson

TABLE I
SUMMARY OF GROUNDWATER QUALITY DATA
MIT.nano Phase III: North Corridor
MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT)
CAMBRIDGE, MASSACHUSETTS
FILE NO. 36514-706

			Samples Submitted with 2014 Application					New sample proposed for the 2017 RGP Application	Receiving water sample collected in support of the 2017 RGP Application
LOCATION	MCP 2014 RCGW-2 Reportable Concentrations (ug/l)	NPDES 2017 RGP Effluent Project Limits (ug/l)	**HA14-B4_2014-0212**	**HA14-B4_2014-0213**	**HA14-B4_2014-0326**	**HA14-B5_2014-0328**	**HA14-B6_2014-0328**	**HA14-B8 (OW)**	**2017-0607-CHARLES RIVER**
SAMPLING DATE			**2/12/2014**	**2/13/2014**	**3/26/2014**	**3/28/2014**	**3/28/2014**	**8/17/2017**	**6/7/2017**
LAB SAMPLE ID			**L1403384-01**	**L1403550-01L1403710-01**	**L1406333-01**	**L1406566-01L1407627-01**	**L1406566-02L1407627-02**	**L1728927-01**	**L1718924-01**
SAMPLE TYPE			GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	Influent	**Receiving Water**
VOCs by GC/MS (ug/l)									
Methylene chloride	2000	4.6	ND(1.5)	-	-	ND(1.5)	ND(1.5)	ND(1.5)	-
1,1-Dichloroethane	2000	70	ND(0.375)	-	-	ND(0.375)	ND(0.375)	ND(0.375)	-
Carbon tetrachloride	2	4.4	ND(0.25)	-	-	ND(0.25)	ND(0.25)	ND(0.25)	-
1,1,2-Trichloroethane	900	5	ND(0.375)	-	-	ND(0.375)	ND(0.375)	ND(0.375)	-
Tetrachloroethene	50	5	ND(0.25)	-	-	ND(0.25)	ND(0.25)	ND(0.25)	-
1,2-Dichloroethane	5	5	ND(0.25)	-	-	ND(0.25)	ND(0.25)	ND(0.25)	-
1,1,1-Trichloroethane	4000	200	ND(0.25)	-	-	ND(0.25)	ND(0.25)	ND(0.25)	-
Benzene	1000	5	ND(0.25)	-	-	ND(0.25)	ND(0.25)	ND(0.25)	-
Vinyl chloride	2	2	ND(0.5)	-	-	ND(0.5)	ND(0.5)	ND(0.5)	-
1,1-Dichloroethene	80	3.2	ND(0.25)	-	-	ND(0.25)	ND(0.25)	ND(0.25)	-
1,2-Dichloroethene, Total	NA	NA	-	-	-	-	-	1	-
Trichloroethene	5	5	ND(0.25)	-	-	ND(0.25)	ND(0.25)	0.85	-
1,2-Dichlorobenzene	2000	600	ND(1.25)	-	-	ND(1.25)	ND(1.25)	ND(1.25)	-
1,3-Dichlorobenzene	6000	320	ND(1.25)	-	-	ND(1.25)	ND(1.25)	ND(1.25)	-
1,4-Dichlorobenzene	60	5	ND(1.25)	-	-	ND(1.25)	ND(1.25)	ND(1.25)	-
Methyl tert butyl ether	5000	70	ND(0.5)	-	-	ND(0.5)	ND(0.5)	ND(0.5)	-
cis-1,2-Dichloroethene	20	70	ND(0.25)	-	-	0.57	ND(0.25)	1	-
Acetone	50000	7970	12	-	-	ND(2.5)	ND(2.5)	9.4	-
Naphthalene	700	20	ND(1.25)	-	-	ND(1.25)	ND(1.25)	ND(1.25)	-
Ethyl ether	10000	NA	2.8	-	-	ND(1.25)	ND(1.25)	ND(1.25)	-
Total VOCs by GC/MS	NA	NA	14.8	-	-	0.57	ND	12.25	-
Total BTEX	NA	100	-	-	-	-	-	ND	-
VOCs by GC/MS-SIM (ug/l)									
1,4-Dioxane	6000	200	ND(1.5)	-	-	ND(1.5)	ND(1.5)	ND(1.5)	-
SVOCs by GC/MS (ug/l)									
Diethyl phthalate	9000	101	-	ND(2.5)	-	ND(2.5)	ND(2.5)	ND(2.45)	-
Phenol	2000	1080	-	ND(2.5)	-	ND(2.5)	ND(2.5)	ND(2.45)	-
Total Phthalates	NA	190	-	ND	-	ND	ND	ND	-
SVOCs by GC/MS-SIM (ug/l)									
Fluoranthene	200	NA	-	0.61	-	0.1	0.1	ND(0.05)	-
Naphthalene	700	20	-	ND(0.1)	-	ND(0.1)	ND(0.1)	ND(0.05)	-
Benzo(a)anthracene	1000	0.3358	-	0.31	-	0.1	0.1	ND(0.05)	-
Benzo(a)pyrene	500	0.3358	-	0.3	-	0.1	0.1	ND(0.05)	-
Benzo(b)fluoranthene	400	0.3358	-	0.4	-	0.1	0.1	ND(0.05)	-
Benzo(k)fluoranthene	100	0.3358	-	0.2	-	0.1	0.1	ND(0.05)	-
Chrysene	70	0.3358	-	0.34	-	0.1	0.1	ND(0.05)	-
Benzo(ghi)perylene	20	NA	-	0.21	-	0.1	0.1	ND(0.05)	-
Phenanthrene	10000	NA	-	0.26	-	0.58	0.1	ND(0.05)	-
Indeno(1,2,3-cd)pyrene	100	0.3358	-	0.21	-	0.1	0.1	ND(0.05)	-
Pyrene	20	NA	-	0.56	-	0.1	0.1	ND(0.05)	-
Pentachlorophenol	200	1	-	ND(0.4)	-	ND(0.4)	ND(0.4)	ND(0.39)	-
Total Group I PAHs	NA	1	-	-	-	-	-	ND	-
Total Group II PAHs	NA	100	-	-	-	-	-	ND	-
Microextractables by GC (ug/l)									
1,2-Dibromoethane	2	NA	ND(0.0055)	-	-	ND(0.005)	ND(0.005)	ND(0.005)	-
1,2-Dibromo-3-chloropropane	1000	NA	-	-	-	-	-	ND(0.005)	-
Total Metals (ug/l)									
Antimony, Total	8000	206	ND(1)	-	-	ND(1)	ND(1)	ND(2)	ND(4)
Arsenic, Total	900	104	6.24	-	-	4.89	2.25	11.94	ND(1)
Cadmium, Total	4	10.2	ND(0.2)	-	-	ND(0.2)	ND(0.2)	ND(0.1)	ND(0.2)
Chromium, Total	300	323	8.49	-	-	2.15	2.94	1.37	ND(1)
Copper, Total	100000	242	5.42	-	-	ND(1)	2.4	ND(0.5)	4.65
Iron, Total	NA	5000	1300	-	-	750	8700	859	795
Lead, Total	10	160	8.64	-	-	ND(0.5)	1.7	ND(0.25)	3.56
Mercury, Total	20	0.739	ND(0.1)	-	-	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.2)
Nickel, Total	200	1450	11.91	-	-	3.39	9.88	ND(1)	ND(2)
Selenium, Total	100	235.8	ND(5)	-	-	ND(5)	ND(5)	ND(2.5)	ND(5)
Silver, Total	7	35.1	ND(0.4)	-	-	ND(0.4)	ND(0.4)	ND(0.2)	ND(0.4)
Zinc, Total	900	420	ND(10)	-	-	ND(10)	ND(10)	ND(5)	11.31
PCBs by GC (ug/l)									
Total PCBs	5	0.000064	-	ND	-	ND	ND	ND	-
General Chemistry									
Solids, Total Suspended	NA	30000	-	63000	-	5600	68000	ND(2500)	-
Chromium, Hexavalent	300	323	ND(5)	-	-	ND(5)	ND(5)	ND(5)	ND(10)
Chromium, Trivalent	600	323	-	-	-	-	-	ND(5)	ND(10)
Nitrogen, Ammonia	NA	Report	-	-	-	-	-	858	241
Temperature (°C)	NA	NA	-	-	-	-	-	-	15.4
pH	NA	NA	8.18	8.17	6.55	7.07	7.18	-	7.66
Total Hardness	NA	NA	-	-	-	-	-	247000	81500
SALINITY	NA	NA	-	-	-	-	-	ND(1000)	-
Cyanide, Total	30	178000	17	-	26	16	5	ND(2.5)	-
Chlorine, Total Residual	NA	200	ND(10)	-	-	ND(10)	ND(10)	ND(10)	-
TPH, SGT-HEM	5000	5000	-	ND(2000)	-	ND(2000)	ND(2200)	ND(2200)	-
Phenolics, Total	NA	NA	ND(15)	-	-	ND(15)	ND(15)	ND(15)	-
Chloride	NA	Report	1750000	-	-	779000	3950000	461000	-
Ethanol	NA	Report	-	-	-	-	-	ND(1000)	-

ABBREVIATIONS:
VOCs : Volatile Organic Compounds
SVOCs: Semi-Volatile Organic Compounds
TPH: Total Petroleum Hydrocarbons
PCBs: Polychlorinated Biphenyls
NA: Not applicable
- : Not analyzed
ND(2.5): Not detected; number in parentheses is one-half the laboratory reporting limit.

NOTES:
1. This table includes only those compounds detected on the dates indicated.
2. **Bold** values detected values exceeding RCGW-2 criteria.
3. pH and temperature are measured in the field
4. Shaded samples indicate the data is greater than 6 months old.

TABLE II
SUMMARY OF HISTORIC GROUNDWATER QUALITY DATA
PREVIOUS PERMIT APPLICATIONS
MIT.nano
CAMBRIDGE, MASSACHUSETTS
FILE NO. 36514-706

			Startup Sample 1		Startup Sample 2		Startup Sample 2 Re-Test		Startup Sample 3	
LOCATION	**NPDES RGP**	**NPDES RGP**	**2015-0122-NPDES2-INF**	**2015-0122-NPDES2-EFF**	**2015-0126-NPDES2-INF**	**2015-0126-NPDES2-EFF**	**2015-0205-NPDES2-INF**	**2015-0205-NPDES2-EFF**	**2015-0210-NPDES2-INF**	**2015-0210-NPDES2-EFF**
SAMPLING DATE	**EFFLUENT LIMITS**	**EFFLUENT LIMITS**	**1/22/2015**	**1/22/2015**	**1/26/2015**	**1/26/2015**	**2/5/2015**	**2/5/2015**	**2/10/2015**	**2/10/2015**
LAB SAMPLE ID			**L1501515-01**	**L1501515-02**	**L1501770-01**	**L1501770-02**	**L1502358-01**	**L1502358-02**	**L1502695-01**	**L1502695-02**
SAMPLE TYPE	**1 - 5 DF**	**>50 - 100 DF**	**Influent**	**Effluent**	**Influent**	**Effluent**	**Influent**	**Effluent**	**Influent**	**Effluent**
VOCs (ug/L)										
cis-1,2-Dichloroethene	70		ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5)	ND(5)
Acetone	Monitor Only		ND(0.5)	ND(5)	ND(0.5)	ND(5)	ND(0.5)	ND(5)	ND(0.5)	ND(5)
Total VOCs	NA		ND	ND	ND	ND	ND	ND	ND	ND
SVOCs (ug/L)										
Fluoranthene[3]	NA		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(a)anthracene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(a)pyrene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(b)fluoranthene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(k)fluoranthene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Chrysene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(ghi)perylene[3]	NA		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Phenanthrene[3]	NA		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Indeno(1,2,3-cd)Pyrene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Pyrene[3]	NA		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Total SVOCs	NA		ND	ND	ND	ND	ND	ND	ND	ND
Total Metals (ug/L)										
Arsenic, Total	10	500	7.37	7.72	9.5	11.3	6.64	6.22	5.13	4.16
Chromium, Total	48.8	1710	1.19	1.19	2.8	6.8	ND(1)	ND(1)	1.29	1.17
Chromium, Hexavalent	11.4	570	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Copper, Total	5.2	260	ND(2)	ND(2)	12.6	5.8	3.28	2.12	6.65	3.23
Iron, Total	1000	5000	1600	1300	3480	**5320**	1100	770	859	543
Lead, Total	1.3	66	0.57	1.46	1.4	8.3	ND(0.5)	0.51	2.21	0.64
Nickel, Total	29	1451	0.73	0.64	2.1	3.8	0.51	1.19	1.59	1.07
Dissolved Metals (ug/L)[5]										
Arsenic, Dissolved	10	500	6.3	7.14	8.4	10.3	5.95	5.04	4.21	3.76
Chromium, Dissolved	48.8	1710	ND(1)	ND(1)	1	6.6	ND(1)	ND(1)	1.04	ND(1)
Copper, Dissolved	5.2	260	ND(2)	ND(2)	1.7	6.1	1.5	ND(1)	1.22	5.82
Iron, Dissolved	1000	5000	760	380	1860	**5210**	830	150	321	86.2
Lead, Dissolved	1.3	66	ND(0.5)	ND(0.5)	ND(0.5)	8	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Nickel, Dissolved	29	1451	1.72	0.9	3.7	3.9	0.56	0.75	1.58	1.86
General Chemistry										
pH (SU)[7]	6.5 to 8.3		6.2	6.3	7.1	7.2	6.8	6.9	6.5	6.6
Solids, Total Suspended (ug/L)	30000		20000	22000	130000	**96000**	2200	17000	7100	4200
Cyanide, Free (ug/L)	5.2		ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)
Chloride (ug/L)	Monitor Only		941000	945000	1020000	988000	977000	1030000	964000	982000

ABBREVIATIONS & NOTES:

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1. **Red Bold** values indicate an exceedance of the NPDES RGP Effluent Limits (DF 1-5 or >50-100 for metals only).
2. **Red Bold ND** values indicate an exceedance of the NPDES RGP Effluent Limits (DF 1-5 or >50-100 for metals only).
3. Total Group II Polycyclic Aromatic Hydrocarbons (PAHs) limited to 100 ug/L.
4. Total Group I PAHs limited to 10 ug/L; although the maximum value for individual PAH compounds is 0.0038 ug/L, the compliance limits are equal to the minimum level (ML) of the test method used.
5. The samples for dissolved metals were field filtered on the dates indicated.
6. pH measured in the field on the dates indicated.

TABLE II
SUMMARY OF HISTORIC GROUNDWATER QUALITY DATA
PREVIOUS PERMIT APPLICATIONS
MIT.nano
CAMBRIDGE, MASSACHUSETTS
FILE NO. 36514-706

			1st Week Sample		2nd Week Sample		3rd Week Sample		Monthly Sample	
LOCATION	**NPDES RGP**	**NPDES RGP**	**2015-0219-NPDES2-INF**	**2015-0219-NPDES2-EFF**	**2015-0226-NPDES2-INF**	**2015-0226-NPDES2-EFF**	**2015-0305-NPDES2-INF**	**2015-0305-NPDES2-EFF**	**2015-0421-NPDES2-INF**	**2015-0421-NPDES2-EFF**
SAMPLING DATE	**EFFLUENT LIMITS**	**EFFLUENT LIMITS**	**2/19/2015**	**2/19/2015**	**2/26/2015**	**2/26/2015**	**3/5/2015**	**3/5/2015**	**4/21/2015**	**4/21/2015**
LAB SAMPLE ID			**L1503170-01**	**L1503170-02**	**L1503679-01**	**L1503679-02**	**L1504129-01**	**L1504129-02**	**L1508171-01**	**L1508171-02**
SAMPLE TYPE	**1 - 5 DF**	**>50 - 100 DF**	**Influent**	**Effluent**	**Influent**	**Effluent**	**Influent**	**Effluent**	**Influent**	**Effluent**
VOCs (ug/L)										
cis-1,2-Dichloroethene	70		ND(5)	ND(0.5)	ND(5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Acetone	Monitor Only		ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	60	ND(5)
Total VOCs	NA		ND	ND	ND	ND	ND	ND	60	ND
SVOCs (ug/L)										
Fluoranthene[3]	NA		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(a)anthracene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(a)pyrene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(b)fluoranthene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(k)fluoranthene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Chrysene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(ghi)perylene[3]	NA		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Phenanthrene[3]	NA		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Indeno(1,2,3-cd)Pyrene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Pyrene[3]	NA		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Total SVOCs	NA		ND	ND	ND	ND	ND	ND	ND	ND
Total Metals (ug/L)										
Arsenic, Total	10	500	6.5	5.77	5.44	5.95	2	5.8	3.62	5.05
Chromium, Total	48.8	1710	1.18	1.6	ND(2.5)	ND(2.5)	ND(2)	ND(2)	4.9	ND(1)
Chromium, Hexavalent	11.4	570	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Copper, Total	5.2	260	7.87	2.32	6.33	ND(1)	7.4	ND(1)	18.51	ND(1)
Iron, Total	1000	5000	1600	1400	730	1700	150	930	1400	1300
Lead, Total	1.3	66	0.74	3.65	0.84	ND(0.5)	0.6	ND(0.5)	7.51	ND(0.5)
Nickel, Total	29	1451	0.91	1.1	0.98	ND(0.5)	1.4	6.9	3.77	0.7
Dissolved Metals (ug/L)[5]										
Arsenic, Dissolved	10	500	6.37	5.04	5.58	5.67	1.9	4.2	2.5	5.2
Chromium, Dissolved	48.8	1710	1.1	ND(1)	ND(2.5)	ND(2.5)	1.8	1.2	2.8	1.6
Copper, Dissolved	5.2	260	ND(1)	1.11	ND(9.53)	ND(1)	6.8	ND(1)	5.7	ND(1)
Iron, Dissolved	1000	5000	870	320	780	700	110	940	ND(50)	1200
Lead, Dissolved	1.3	66	ND(0.5)	ND(0.5)	ND(0.58)	ND(0.5)	0.6	ND(0.5)	ND(0.5)	ND(0.5)
Nickel, Dissolved	29	1451	0.96	1.24	1.1	21.13	1.5	0.6	1.8	ND(0.5)
General Chemistry										
pH (SU)[7]	6.5 to 8.3		6.5	6.6	6.7	6.6	6.8	6.6	6.7	6.9
Solids, Total Suspended (ug/L)	30000		51000	**33000**	12000	2800	60000	9400	49000	1000
Cyanide, Free (ug/L)	5.2		ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)
Chloride (ug/L)	Monitor Only		977000	981000	1010000	985000	915000	976000	503000	1060000

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3. Total Group II Polycyclic Aromatic Hydrocarbons (PAHs) limited to 100 ug/L.
4. Total Group I PAHs limited to 10 ug/L; although the maximum value for individual PAH compounds is 0.0038 ug/L, the compliance limits are equal to the minimum level (ML) of the test method used.
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6. pH measured in the field on the dates indicated.

TABLE II
SUMMARY OF HISTORIC GROUNDWATER QUALITY DATA
PREVIOUS PERMIT APPLICATIONS
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CAMBRIDGE, MASSACHUSETTS
FILE NO. 36514-706

			2nd System Re-Start Sample		2nd System Re-Start Sample 2		2nd System 1st Weekly Re-start Sample		2nd System 2nd Weekly Re-start Sample		2nd System 3rd Weekly Re-start Sample	
LOCATION	**NPDES RGP**	**NPDES RGP**	**2015-0929-NPDES-INF**	**2015-0929-NPDES-EFF**	**2015-1001-NPDES-INF**	**2015-1001-NPDES-EFF**	**2015-1008-NPDES-INF**	**2015-1008-NPDES-EFF**	**2015-1015-NPDES-INF**	**2015-1015-NPDES-EFF**	**2015-1022-NPDES-INF**	**2015-1022-NPDES-EFF**
SAMPLING DATE	**EFFLUENT LIMITS**	**EFFLUENT LIMITS**	**9/29/2015**	**9/29/2015**	**10/1/2015**	**10/1/2015**	**10/8/2015**	**10/8/2015**	**10/15/2015**	**10/15/2015**	**10/22/2015**	**10/22/2015**
LAB SAMPLE ID			**L1524284-01**	**L1524284-02**	**L1524655-01**	**L1524655-02**	**L1525452-01**	**L1525452-02**	**L1526215-01**	**L1526215-02**	**L1526944-01**	**L1526944-02**
SAMPLE TYPE	**1 - 5 DF**	**>50 - 100 DF**	**Influent**	**Effluent**	**Influent**	**Effluent**	**Influent**	**Effluent**	**Influent**	**Effluent**	**Influent**	**Effluent**
VOCs (ug/L)												
cis-1,2-Dichloroethene	70		ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Acetone	Monitor Only		27	49	ND(5)	7.3	ND(5)	ND(5)	6.8	5.8	ND(5)	ND(5)
Total VOCs	NA		27	49	ND	7.3	ND	ND	6.8	5.8	ND	ND
SVOCs (ug/L)												
Fluoranthene[3]	NA		1.1	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(a)anthracene[4]	5		0.67	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(a)pyrene[4]	5		0.72	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(b)fluoranthene[4]	5		0.97	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(k)fluoranthene[4]	5		0.35	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Chrysene[4]	5		0.68	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(ghi)perylene[3]	NA		0.55	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Phenanthrene[3]	NA		0.55	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Indeno(1,2,3-cd)Pyrene[4]	5		0.5	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Pyrene[3]	NA		1.1	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Total SVOCs	NA		7.19	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Metals (ug/L)												
Arsenic, Total	10	500	17.8	3.03	1.17	8.05	0.98	1.1	4.45	3.65	3.4	2.1
Chromium, Total	48.8	1710	27.43	5.66	5.13	6.51	3.29	3.79	3.14	3.26	4.5	2.6
Chromium, Hexavalent	11.4	570	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Copper, Total	5.2	260	35.36	5.84	ND(1)	10.09	4.6	9.04	4.73	7.67	8.8	6.5
Iron, Total	1000	5000	19000	450	1200	1100	540	730	1100	760	2400	460
Lead, Total	1.3	66	49.79	0.83	0.67	5.16	ND(0.5)	0.97	4.7	3.03	11.5	0.9
Nickel, Total	29	1451	23.32	6.86	1.1	4.02	1.6	10.9	4.8	11.8	5.3	4.7
Dissolved Metals (ug/L)[5]												
Arsenic, Dissolved	10	500	11.4	2.56	1.17	7.56	0.83	1.25	5.76	3.98	2.9	2.2
Chromium, Dissolved	48.8	1710	9.45	3.93	5.56	5.87	3.65	3.27	2.82	5.4	4.9	ND(2)
Copper, Dissolved	5.2	260	13.1	4.45	2.04	7.64	7.11	12.38	4.51	7.6	4.6	6.6
Iron, Dissolved	1000	5000	4700	70	1200	1000	540	720	1200	790	1300	290
Lead, Dissolved	1.3	66	13.72	ND(0.5)	0.86	4.52	0.59	1.86	5.01	3.21	10.1	ND(0.5)
Nickel, Dissolved	29	1451	10.79	6.19	2.05	4.01	3.05	26.13	4.46	4.48	5.2	4.1
General Chemistry												
pH (SU)[7]	6.5 to 8.3		6.7	6.7	6.7	6.7	6.4	6.7	7.4	7.5	6.8	6.8
Solids, Total Suspended (ug/L)	30000		460000	8400	34000	26000	160000	8400	56000	7000	44000	5000
Cyanide, Free (ug/L)	5.2		ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)
Chloride (ug/L)	Monitor Only		856000	612000	2500000	729000	1590000	2000000	784000	1320000	1380000	1410000

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4. Total Group I PAHs limited to 10 ug/L; although the maximum value for individual PAH compounds is 0.0038 ug/L, the compliance limits are equal to the minimum level (ML) of the test method used.
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SUMMARY OF HISTORIC GROUNDWATER QUALITY DATA
PREVIOUS PERMIT APPLICATIONS
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CAMBRIDGE, MASSACHUSETTS
FILE NO. 36514-706

			2nd System 1st Monthly System Re-Start Sample		2nd System 2nd Monthly System Re-Start Sample		2nd System 3rd Monthly System Re-Start Sample		2nd System 4th Monthly System Re-Start Sample	
LOCATION	**NPDES RGP**	**NPDES RGP**	**2015-1118-NPDES-INF**	**2015-1118-NPDES-EFF**	**2015-1217-NPDES-INF**	**2015-1217-NPDES-EFF**	**2016-0114-NPDES-INF**	**2016-0114-NPDES-EFF**	**2016-0114-NPDES-INF**	**2016-0114-NPDES-EFF**
SAMPLING DATE	**EFFLUENT LIMITS**	**EFFLUENT LIMITS**	**11/18/2015**	**11/18/2015**	**12/17/2015**	**12/17/2015**	**1/14/2016**	**1/14/2016**	**2/19/2016**	**2/19/2016**
LAB SAMPLE ID			**L1530347-01**	**L1530347-02**	**L1533520-01**	**L1533520-02**	**L1601224-01**	**L1601224-02**	**L1601224-01**	**L1601224-02**
SAMPLE TYPE	**1 - 5 DF**	**>50 - 100 DF**	**Influent**	**Effluent**	**Influent**	**Effluent**	**Influent**	**Effluent**	**Influent**	**Effluent**
VOCs (ug/L)										
cis-1,2-Dichloroethene	70		ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Acetone	Monitor Only		ND(5)	ND(5)	10	6.1	ND(5)	ND(5)	ND(5)	ND(5)
Total VOCs	NA		ND	ND	10	6.1	ND	ND	ND	ND
SVOCs (ug/L)										
Fluoranthene[3]	NA		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(a)anthracene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(a)pyrene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(b)fluoranthene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(k)fluoranthene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Chrysene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(ghi)perylene[3]	NA		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Phenanthrene[3]	NA		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Indeno(1,2,3-cd)Pyrene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Pyrene[3]	NA		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Total SVOCs	NA		ND	ND	ND	ND	ND	ND	ND	ND
Total Metals (ug/L)										
Arsenic, Total	10	500	3.2	2.3	10.3	6.2	4.29	2.65	4.29	2.65
Chromium, Total	48.8	1710	4.3	1.7	19.5	4.2	5.1	3.36	5.1	3.36
Chromium, Hexavalent	11.4	570	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Copper, Total	5.2	260	5.4	5.3	24.8	4	29.73	2.58	29.73	2.58
Iron, Total	1000	5000	2000	100	7600	680	2200	310	2200	310
Lead, Total	1.3	66	5.1	ND(0.5)	13.7	0.5	10.91	ND(0.5)	10.91	ND(0.5)
Nickel, Total	29	1451	10.5	10.1	20.6	2.1	48.34	3.16	48.34	3.16
Dissolved Metals (ug/L)[5]										
Arsenic, Dissolved	10	500	2.9	2.2	10.32	6.44	4.37	2.54	4.37	2.54
Chromium, Dissolved	48.8	1710	5.4	3.2	20.02	5.46	4.21	3.09	4.21	3.09
Copper, Dissolved	5.2	260	5.1	5.1	20.53	4	29.34	2.9	29.34	2.9
Iron, Dissolved	1000	5000	1600	100	7100	680	1900	270	1900	270
Lead, Dissolved	1.3	66	4.5	ND(0.5)	13.17	0.54	10.8	ND(0.5)	10.8	ND(0.5)
Nickel, Dissolved	29	1451	10.7	7.2	26.23	2.71	46.07	2.49	46.07	2.49
General Chemistry										
pH (SU)[7]	6.5 to 8.3		6.8	6.9	6.8	6.9	6.7	6.8	6.8	6.9
Solids, Total Suspended (ug/L)	30000		49000	1100	230000	5000	43000	2400	43000	2400
Cyanide, Free (ug/L)	5.2		ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)
Chloride (ug/L)	Monitor Only		1280000	1170000	1820000	2400000	1120000	1440000	1120000	1440000

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CAMBRIDGE, MASSACHUSETTS
FILE NO. 36514-706

			Monthly Sample		Monthly Sample		Restart Sample 1		Restart Sample 2	
LOCATION	**NPDES RGP**	**NPDES RGP**	**2016-0324-INF**	**2016-0324-EFF**	**2016-0414-NPDES-INF**	**2016-0414-NPDES-EFF**	**2016-0425-NPDES-INF**	**2016-0425-NPDES-EFF**	**2016-0428-NPDES-INF**	**2016-0428-NPDES-EFF**
SAMPLING DATE	**EFFLUENT LIMITS**	**EFFLUENT LIMITS**	**3/24/2016**	**3/24/2016**	**4/14/2016**	**4/14/2016**	**4/25/2016**	**4/25/2016**	**4/28/2016**	**4/28/2016**
LAB SAMPLE ID			**L1608573-01**	**L1608573-02**	**L1611090-01**	**L1611090-02**	**L1612202-01**	**L1612202-02**	**L1612763-01**	**L1612763-02**
SAMPLE TYPE	**1 - 5 DF**	**>50 - 100 DF**	**Influent**	**Effluent**	**Influent**	**Effluent**	**Influent**	**Effluent**	**Influent**	**Effluent**
VOCs (ug/L)										
cis-1,2-Dichloroethene	70		ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Acetone	Monitor Only		ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
Total VOCs	NA		ND	ND	ND	ND	ND	ND	ND	ND
SVOCs (ug/L)										
Fluoranthene[3]	NA		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(a)anthracene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(a)pyrene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(b)fluoranthene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(k)fluoranthene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Chrysene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(ghi)perylene[3]	NA		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Phenanthrene[3]	NA		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Indeno(1,2,3-cd)Pyrene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Pyrene[3]	NA		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Total SVOCs	NA		ND	ND	ND	ND	ND	ND	ND	ND
Total Metals (ug/L)										
Arsenic, Total	10	500	1.34	3.03	ND(0.5)	5.9	4.5	4.15	3.9	2.2
Chromium, Total	48.8	1710	3.36	3.78	1.2	6.1	5.15	4.84	6.2	5
Chromium, Hexavalent	11.4	570	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Copper, Total	5.2	260	ND(1)	10.47	ND(1)	23.6	23.36	23.49	8.1	10.9
Iron, Total	1000	5000	750	1900	750	**5800**	3300	2900	2900	2600
Lead, Total	1.3	66	ND(0.5)	ND(0.5)	ND(0.5)	1.8	2.03	1.98	1.1	1
Nickel, Total	29	1451	ND(2)	8.79	ND(3)	14.7	11.38	13.51	6	10.5
Dissolved Metals (ug/L)[5]										
Arsenic, Dissolved	10	500	1.09	3.03	1.1	6.1	4.68	3.86	3.8	2.6
Chromium, Dissolved	48.8	1710	3.05	3.48	3.6	6.1	5.51	4.38	6.3	5.1
Copper, Dissolved	5.2	260	ND(1)	10.17	ND(1)	25	23	22.18	8.2	10.6
Iron, Dissolved	1000	5000	820	1900	860	**5800**	3300	2800	2700	2500
Lead, Dissolved	1.3	66	ND(0.5)	ND(0.5)	ND(0.5)	1.9	2	1.61	1.2	0.9
Nickel, Dissolved	29	1451	ND(2)	7.97	2.4	14.1	12.29	12.16	5.8	9.9
General Chemistry										
pH (SU)[7]	6.5 to 8.3		6.5	6.6	6.9	7.2	7.2	7.1	7.1	7.4
Solids, Total Suspended (ug/L)	30000		1500	11000	1200	**32000**	21000	8500	19000	17000
Cyanide, Free (ug/L)	5.2		ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)
Chloride (ug/L)	Monitor Only		2120000	1850000	2030000	1700000	1680000	1730000	1940000	2090000

ABBREVIATIONS & NOTES:

"NA" : Not Applicable; "-" : Not Analyzed

ND(0.025) : Not detected; number in parentheses is the laboratory reporting limit

1. **Red Bold** values indicate an exceedance of the NPDES RGP Effluent Limits (DF 1-5 or >50-100 for metals only).
2. **Red Bold ND** values indicate an exceedance of the NPDES RGP Effluent Limits (DF 1-5 or >50-100 for metals only).
3. Total Group II Polycyclic Aromatic Hydrocarbons (PAHs) limited to 100 ug/L.
4. Total Group I PAHs limited to 10 ug/L; although the maximum value for individual PAH compounds is 0.0038 ug/L, the compliance limits are equal to the minimum level (ML) of the test method used.
5. The samples for dissolved metals were field filtered on the dates indicated.
6. pH measured in the field on the dates indicated.

TABLE II
SUMMARY OF HISTORIC GROUNDWATER QUALITY DATA
PREVIOUS PERMIT APPLICATIONS
MIT.nano
CAMBRIDGE, MASSACHUSETTS
FILE NO. 36514-706

			Restart Weekly Sample 1		Restart Weekly Sample 2	
LOCATION	**NPDES RGP**	**NPDES RGP**	**2016-0505-NPDES-INF**	**2016-0505-NPDES-EFF**	**2016-0512-NPDES-INF**	**2016-0512-NPDES-EFF**
SAMPLING DATE	**EFFLUENT LIMITS**	**EFFLUENT LIMITS**	**5/5/2016**	**5/5/2016**	**5/12/2016**	**5/12/2016**
LAB SAMPLE ID			**L1613574-01**	**L1613574-02**	**L1614495-01**	**L1614495-02**
SAMPLE TYPE	**1 - 5 DF**	**>50 - 100 DF**	**Influent**	**Effluent**	**Influent**	**Effluent**
VOCs (ug/L)						
cis-1,2-Dichloroethene	70		ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Acetone	Monitor Only		ND(5)	ND(5)	5.4	5.2
Total VOCs	NA		ND	ND	5.4	5.2
SVOCs (ug/L)						
Fluoranthene[3]	NA		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(a)anthracene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(a)pyrene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(b)fluoranthene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(k)fluoranthene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Chrysene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Benzo(ghi)perylene[3]	NA		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Phenanthrene[3]	NA		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Indeno(1,2,3-cd)Pyrene[4]	5		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Pyrene[3]	NA		ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Total SVOCs	NA		ND	ND	ND	ND
Total Metals (ug/L)						
Arsenic, Total	10	500	14.65	11.64	2.55	1.12
Chromium, Total	48.8	1710	13.68	14.35	5.84	3.75
Chromium, Hexavalent	11.4	570	ND(10)	ND(10)	ND(10)	ND(10)
Copper, Total	5.2	260	29.76	29.36	13.9	6.7
Iron, Total	1000	5000	14000	**12000**	4900	810
Lead, Total	1.3	66	1.3	1.65	1.19	ND(1)
Nickel, Total	29	1451	21.66	26.67	12.55	15.09
Dissolved Metals (ug/L)[5]						
Arsenic, Dissolved	10	500	13.8	13.1	2.45	0.84
Chromium, Dissolved	48.8	1710	12.9	15.8	5.7	3.49
Copper, Dissolved	5.2	260	28.5	32.9	14.66	6.23
Iron, Dissolved	1000	5000	13000	**12000**	5000	710
Lead, Dissolved	1.3	66	1.1	1.6	1.16	ND(0.5)
Nickel, Dissolved	29	1451	21	30.9	12.46	16.73
General Chemistry						
pH (SU)[7]	6.5 to 8.3		6.8	7.3	6.8	7.4
Solids, Total Suspended (ug/L)	30000		41000	**60000**	27000	3900
Cyanide, Free (ug/L)	5.2		ND(2)	ND(2)	ND(2)	ND(2)
Chloride (ug/L)	Monitor Only		1690000	1660000	1690000	1670000

ABBREVIATIONS & NOTES:

"NA" : Not Applicable; "-" : Not Analyzed

ND(0.025) : Not detected; number in parentheses is the laboratory reporting limit

1. **Red Bold** values indicate an exceedance of the NPDES RGP Effluent Limits (DF 1-5 or >50-100 for metals only).
2. **Red Bold ND** values indicate an exceedance of the NPDES RGP Effluent Limits (DF 1-5 or >50-100 for metals only).
3. Total Group II Polycyclic Aromatic Hydrocarbons (PAHs) limited to 100 ug/L.
4. Total Group I PAHs limited to 10 ug/L; although the maximum value for individual PAH compounds is 0.0038 ug/L, the compliance limits are equal to the minimum level (ML) of the test method used.
5. The samples for dissolved metals were field filtered on the dates indicated.
6. pH measured in the field on the dates indicated.

HALEY ALDRICH

MIT.NANO
CAMBRIDGE, MASSACHUSETTS

PROJECT LOCUS

SCALE: 1:24,000
SEPTEMBER 2017

FIGURE 1

36514-510 1.PDF

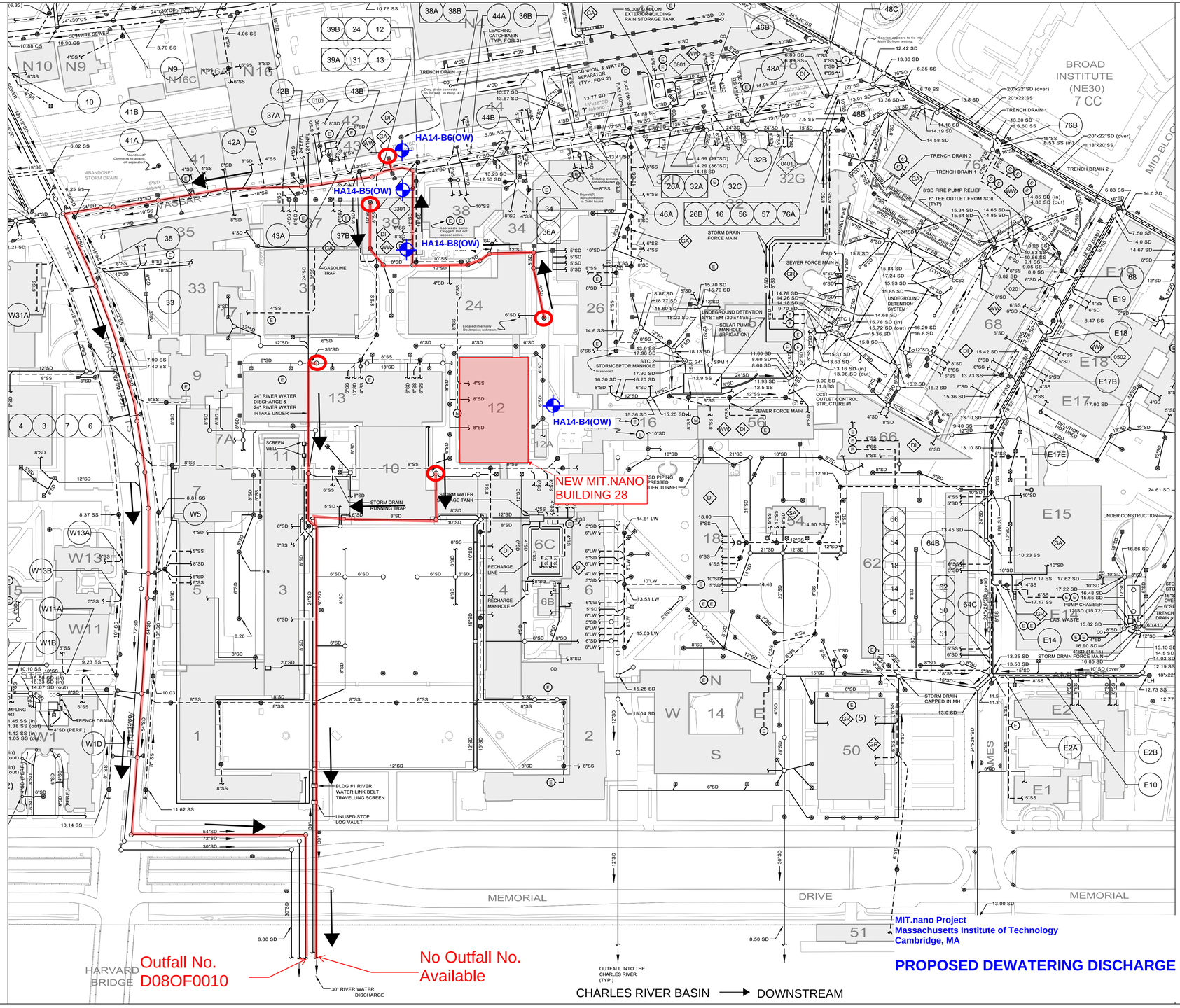
HA14-B6(OW)

Designation and Approximate Location of Groundwater Observation Well

Route of Discharge Water

Flow Direction

Discharge Location



FILE_ID: ALL_000LC

MIT Department of FACILITIES
77 Massachusetts Avenue, Cambridge, MA 02139

Campus Utility Distribution

REVISIONS		
NO.	DESCRIPTION	DATE
29	CAMPUS BASEMAP UPDATE	10.21.10
30	BLDG E62/GENERAL REVISIONS	10.21.10
31	CAMPUS BASEMAP UPDATE	04.04.11
32	BLDG 76/AS-BUILT	04.04.11
33	BLDG W1/AS-BUILT	11.15.11
34	CAMPUS BASEMAP UPDATE	02.06.12

PROJECT No. :
DATE : 3.16.01
DRAWN : I.Arestova
CHECKED :
SCALE : 1"=100'-0"

NORTH
MA-NAD27

Storm & Sanitary
Main Campus

SS3
SHEET 3 of 6

FIGURE 2

City of Cambridge September 13, 2017

HALEY ALDRICH

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASSACHUSETTS

RECEIVING WATER SAMPLING LOCATION PLAN

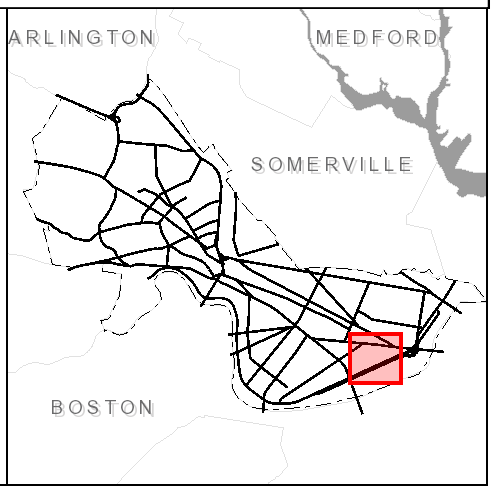
SCALE: AS SHOWN
SEPTEMBER 2017

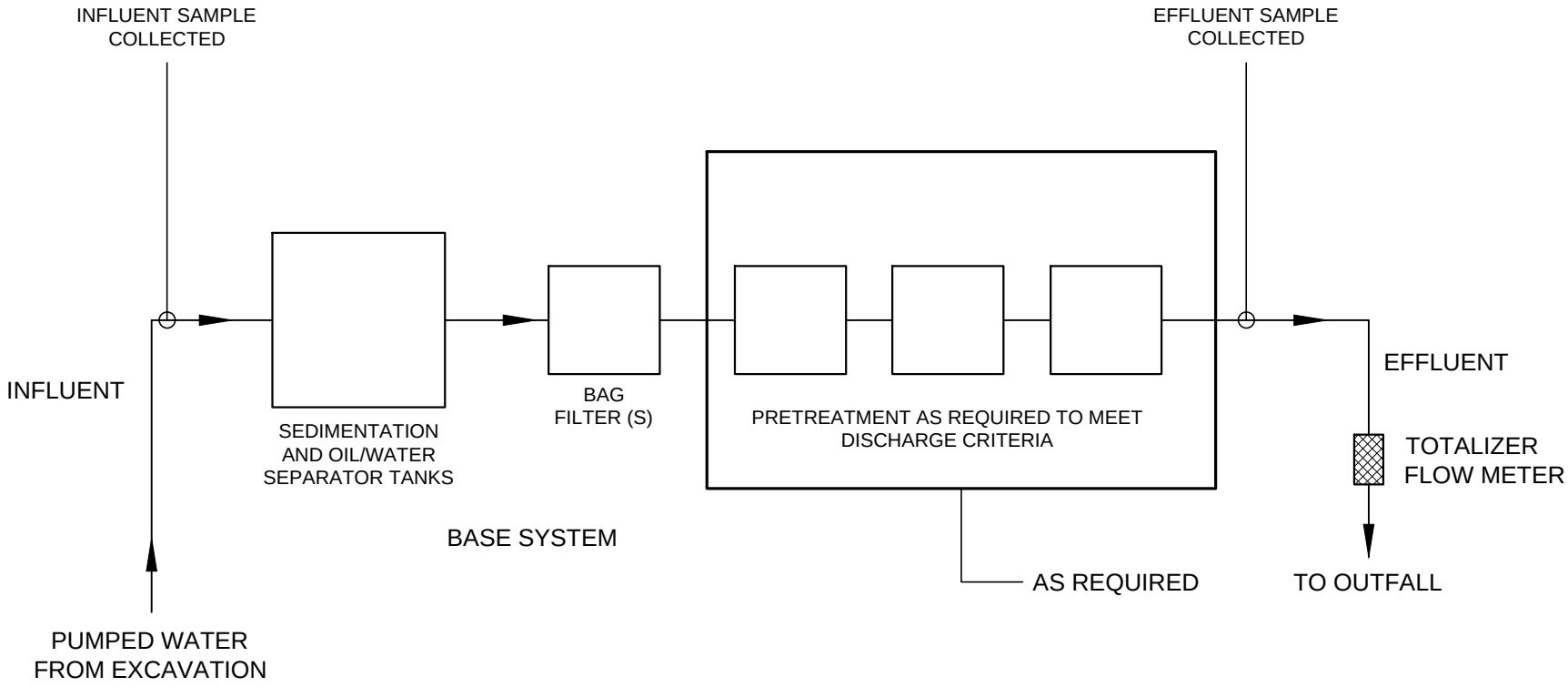
FIGURE 3

City of Cambridge
Massachusetts

1" = 384 ft

www.cambridgema.gov/gis





LEGEND:

DIRECTION OF FLOW

NOTE:

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

HALEY & ALDRICH

MIT CENTRAL UTILITY PLANT (CUP) & AREA 5
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASSACHUSETTS

PROPOSED TREATMENT SYSTEM SCHEMATIC

SCALE: NONE
SEPTEMBER 2017

FIGURE 4

APPENDIX A

2014 Approval Letters

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Central Regional Office • 627 Main Street, Worcester MA 01608 • 508-792-7650

DEVAL L. PATRICK
Governor

RICHARD K. SULLIVAN JR.
Secretary

DAVID W. CASH
Commissioner

May 6, 2014

Victor Alvarez
EPA-New England, Region I
5 Post Office Square, Suite 100
Mail Code OEP06-2
Boston MA 02109

RE: Massachusetts Institute of Technology
Proposed Building #28
MIT.nano Project
Cambridge MA 02139
Groundwater Remediation General Permit, BASIN CODE 72

Dear Mr. Alvarez,

The Massachusetts Department of Environmental Protection, Division of Watershed Management, has reviewed the notice of intent to be covered under the Remediation & Miscellaneous Contaminated Sites General Permit (RGP) for the above referenced application.

The Department concurs that this project should be authorized to discharge under the permit to the Charles River, a Class B waterbody in the area of the discharge.

The discharge is expected to last until January 2018 through up to 5 outfalls. Effluent limitations, minimum levels and test methods are specified in the General Permit.

The applicant should note written notification of work completion is needed. Please call me at 508/767-2854 if you have any questions.

Sincerely,

Robert Kubit, P.E.

Cc: Todd Butler/Haley & Aldrich, Inc.
MADEP/BWSC/NERO

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 1
5 Post Office Square, Suite 100
BOSTON, MA 02109-3912

CERTIFIED MAIL RETURN RECEIPT REQUESTED

JUN 03 2014

Dick Williamson
Project Superintendent
2 Seaport Lane
Boston, MA 02210

Re: Authorization to discharge under the Remediation General Permit (RGP) – MAG910000. MIT. nano Project. Proposed Building 28 site located at 60 Vassar St., Building 12, Cambridge, MA 02139 Middlesex County; Authorization # MAG910620

Dear Mr. Williamson:

Based on the review of a Notice of Intent (NOI) submitted by Todd R. Butler from the consulting firm Haley & Aldrich, Inc., on behalf of Massachusetts Institute of Technology (MIT), for the site referenced above, the U.S. Environmental Protection Agency (EPA) hereby authorizes you, as the named Operator, to discharge in accordance with the provisions of the RGP at that site. Your authorization number is listed above.

The checklist enclosed with this RGP authorization indicates the pollutants which you are required to monitor. Also indicated on the checklist are the effluent limits, test methods and minimum levels (MLs) for each pollutant. Please note that the checklist does not represent the complete requirements of the RGP. Operators must comply with all of the applicable requirements of this permit, including influent and effluent monitoring, narrative water quality standards, record keeping, and reporting requirements, found in Parts I and II, and Appendices I – VIII of the RGP. See EPA's website for the complete RGP and other information at: http://www.epa.gov/region1/npdes/mass.html#dgp.

Please note the enclosed checklist includes parameters that have been detected at the site's preliminary soils and groundwater chemical characterization. Most of the reported values do not exceed RGP's Appendix III limits however, the NOI indicated "Believed Present" therefore, monitoring is required in the event that these parameters are detected above the RGP limits during construction.

Also, please note that the metals included on the checklist are dilution dependent pollutants and subject to limitations based on selected dilution ranges and technology-based ceiling limitations. For each parameter the dilution factor 79.18 for this site is within a dilution range of greater fifty to one hundred (>50-100), established in the RGP. (See the RGP Appendix IV for Massachusetts facilities). Therefore, the limits for arsenic

of 500 ug/L, trivalent chromium 1,710, copper of 260 ug/L, lead of 66 ug/L, nickel of 1,451 ug/L, and iron of 5,000ug/L, are required to achieve permit compliance at your site.

Finally, please note the checklist of pollutants attached to this authorization is subject to a recertification if the operations at the site result in a discharge lasting longer than six months. A recertification can be submitted to EPA within six (6) to twelve (12) months of operations in accordance with the 2010 RGP regulations.

This general permit and authorization to discharge will expire on September 9, 2015. You have reported that this project will terminate on December 31, 2017. Since the expected project completion date is beyond the expiration date of the current permit, you will be required to submit a new NOI for authorization under the reissued RGP. EPA will notify you once a new permit is available. Also, you are required to submit a Notice of Termination (NOT) to the attention of: npdes.generalpermits@epa.gov 30 days after the project completion.

Thank you in advance for your cooperation in this matter. Please contact Victor Alvarez at 617-918-1572 or Alvarez.Victor@epa.gov, if you have any questions.

Sincerely,

Thelma Murphy

Thelma Murphy, Chief
Storm Water and Construction
Permits Section

Enclosure

cc: Robert Kubit, MassDEP
Lisa Peterson, DPW
Todd R. Buttler, Haley & Aldrich, Inc.

2010 Remediation General Permit
Summary of Monitoring Parameters[1]

NPDES Authorization Number:	**MAG910620**
Authorization Issued:	Month, 2014
Facility/Site Name:	MIT.nano Project. Proposed Building 28
Facility/Site Address:	60 Vassar St. Building 12 in Cambridge MA 02139, Middlesex County
	Email address of owner: illv@MIT.EDU
Legal Name of Operator:	Turner Construction Company
Operator contact name, title, and Address:	Dick Williamson, Project Superintendent located at 2 Sea Port Lane, Boston, MA 02210
	Email: rwilliamson@tcco.com
Estimated date of the site's Completion:	December 31, 2017
Category and Sub-Category:	Category III- Contaminated Construction Dewatering. Sub-category A. General Urban Fill Sites
RGP Termination Date:	September 10, 2015
Receiving Water:	Charles River

Monitoring & Limits are applicable if checked. All samples are to be collected as grab samples

	Parameter	**Effluent Limit/Method#/ML** (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
√	1. Total Suspended Solids (TSS)	30 milligrams/liter (mg/L) **, 50 mg/L for hydrostatic testing ** Me#160.2/ML5ug/L
	2. Total Residual Chlorine (TRC) [1]	Freshwater = 11 ug/L ** Saltwater = 7.5 ug/L **/ Me#330.5/ML 20ug/L
	3. Total Petroleum Hydrocarbons (TPH)	5.0 mg/L/ Me# 1664A/ML 5.0mg/L
√	4. Cyanide (CN) [2, 3]	Freshwater = 5.2 ug/l ** Saltwater = 1.0 ug/L **/ Me#335.4/ML 10ug/L
	5. Benzene (B)	5ug/L /50.0 ug/L for hydrostatic testing only/ Me#8260C/ML 2 ug/L
	6. Toluene (T)	(limited as ug/L total BTEX)/ Me#8260C/ ML 2ug/L
	7. Ethylbenzene (E)	(limited as ug/L total BTEX) Me#8260C/ ML 2ug/L
	8. (m,p,o) Xylenes (X)	(limited as ug/L total BTEX) Me#8260C/ ML 2ug/L

	Parameter	Effluent Limit/Method#/ML (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
	9. Total Benzene, Toluene, Ethyl Benzene, and Xylenes (BTEX) [4]	100 ug/L/ Me#8260C/ ML 2ug/L
	10. Ethylene Dibromide (EDB) (1,2- Dibromoethane)	0.05 ug/l/ Me#8260C/ ML 10ug/L
	11. Methyl-tert-Butyl Ether (MtBE)	70.0 ug/l/Me#8260C/ML 10ug/L
	12.tert-Butyl Alcohol (TBA) (TertiaryButanol)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
	13. tert-Amyl Methyl Ether. (TAME)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
	14. Naphthalene [5]	20 ug/L /Me#8260C/ML 2ug/L
	15. Carbon Tetrachloride	4.4 ug/L /Me#8260C/ ML 5ug/L
	16. 1,2 Dichlorobenzene (o-DCB)	600 ug/L /Me#8260C/ ML 5ug/L
	17. 1,3 Dichlorobenzene (m-DCB)	320 ug/L /Me#8260C/ ML 5ug/L
	18. 1,4 Dichlorobenzene (p-DCB)	5.0 ug/L /Me#8260C/ ML 5ug/L
	18a. Total dichlorobenzene	763 ug/L - NH only /Me#8260C/ ML 5ug/L
	19. 1,1 Dichloroethane (DCA)	70 ug/L /Me#8260C/ ML 5ug/L
	20. 1,2 Dichloroethane (DCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
	21. 1,1 Dichloroethene (DCE)	3.2 ug/L/Me#8260C/ ML 5ug/L
√	22. cis-1,2 Dichloroethene (DCE)	70 ug/L/Me#8260C/ ML 5ug/L
	23. Methylene Chloride	4.6 ug/L/Me#8260C/ ML 5ug/L
	24. Tetrachloroethene (PCE)	5.0 ug/L/Me#8260C/ ML 5ug/L
	25. 1,1,1 Trichloro-ethane (TCA)	200 ug/L/Me#8260C/ ML 5ug/L
	26. 1,1,2 Trichloro-ethane (TCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
	27. Trichloroethene (TCE)	5.0 ug/L /Me#8260C/ ML 5ug/L
	28. Vinyl Chloride (Chloroethene)	2.0 ug/L /Me#8260C/ ML 5ug/L
√	29. Acetone	Monitor Only(ug/L)/Me#8260C/ML 50ug/L
	30. 1,4 Dioxane	Monitor Only /Me#1624C/ML 50ug/L
	31. Total Phenols	300 ug/L Me#420.1&420.2/ML 2 ug/L/ Me# 420.4 /ML 50ug/L
	32. Pentachlorophenol (PCP)	1.0 ug/L /Me#8270D/ML 5ug/L,Me#604 &625/ML 10ug/L
	33. Total Phthalates (Phthalate esters) [6]	3.0 ug/L ** /Me#8270D/ML 5ug/L, Me#606/ML 10ug/L& Me#625/ML 5ug/L
	34. Bis (2-Ethylhexyl) Phthalate [Di- (ethylhexyl) Phthalate]	6.0 ug/L /Me#8270D/ML 5ug/L,Me#606/ML 10ug/L & Me#625/ML 5ug/L

	Parameter	Effluent Limit/Method#/ML (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
√	35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	10.0 ug/L
√	a. Benzo(a) Anthracene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
√	b. Benzo(a) Pyrene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
√	c. Benzo(b)Fluoranthene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
√	d. Benzo(k)Fluoranthene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
√	e. Chrysene [7]	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	f. Dibenzo(a,h)anthracene [7]	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
√	g. Indeno(1,2,3-cd) Pyrene [7]	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML5ug/L
	36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)	100 ug/L
	h. Acenaphthene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	i. Acenaphthylene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	j. Anthracene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	k. Benzo(ghi) Perylene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	l. Fluoranthene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	m. Fluorene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	n. Naphthalene [5]	20 ug/l / Me#8270/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	o. Phenanthrene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	p. Pyrene	X/Me#8270D/ML5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	37. Total Polychlorinated Biphenyls (PCBs) [8, 9]	0.000064 ug/L/Me# 608/ ML 0.5 ug/L
√	38. Chloride	Monitor only/Me# 300.0/ ML 100 ug/L

	Metal parameter	Total Recoverable MA/Metal Limit H [10] = 50 mg/l CaCO3, Units = ug/l [(11/12)] Freshwater Limits	Minimum level=ML	
	39. Antimony	5.6	ML	10
√	40. Arsenic **	141	ML	20
	41. Cadmium **	0.2	ML	10
√	42. Chromium III (trivalent) **	1,710	ML	15
	43. Chromium VI (hexavalent) **	11.4	ML	10
√	44. Copper **	260	ML	15
√	45. Lead **	66	ML	20
	46. Mercury **	0.9	ML	02
√	47. Nickel **	1,451	ML	20
	48. Selenium **	5	ML	20
	49. Silver	1.2	ML	10
	50. Zinc **	66.6	ML	15
√	51. Iron	5,000	ML	20

	Other Parameters	Limit
√	52. Instantaneous Flow	Site specific in CFS
√	53. Total Flow	Site specific in CFS
√	54. pH Range for Class A & Class B Waters in MA	6.5-8.3; 1/Month/Grab[13]
	55. pH Range for Class SA & Class SB Waters in MA	6.5-8.3; 1/Month/Grab[13]
	56. pH Range for Class B Waters in NH	6.5-8; 1/Month/Grab[13]
	57. Daily maximum temperature - Warm water fisheries	83°F; 1/Month/Grab[14]
	58. Daily maximum temperature - Cold water fisheries	68°F; 1/Month/Grab[14]
	59. Maximum Change in Temperature in MA - Any Class A water body	1.5°F; 1/Month/Grab[14]
	60. Maximum Change in Temperature in MA - Any Class B water body- Warm Water	5°F; 1/Month/Grab[14]
	61. Maximum Change in Temperature in MA – Any Class B water body - Cold water and Lakes/Ponds	3°F; 1/Month/Grab[14]
	62. Maximum Change in Temperature in MA – Any Class SA water body - Coastal	1.5°F; 1/Month/Grab[14]
	63. Maximum Change in Temperature in MA – Any Class SB water body - July to September	1.5°F; 1/Month/Grab[14]
	64. Maximum Change in Temperature in MA –Any Class SB water body - October to June	4°F; 1/Month/Grab[14]

Footnotes:

[1] Although the maximum values for TRC are 11ug/l and 7.5 ug/l for freshwater, and saltwater respectively, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., Method 330.5, 20 ug/l).
[2] Limits for cyanide are based on EPA's water quality criteria expressed as micrograms per liter. There is currently no EPA approved test method for free cyanide. Therefore, total cyanide must be reported.
[3] Although the maximum values for cyanide are 5.2 ug/l and 1.0 ug/l for freshwater and saltwater, respectively, the compliance limits are equal to the minimum level (ML) of the Method 335.4 as listed in Appendix VI (i.e., 10 ug/l).
[4] BTEX = sum of Benzene, Toluene, Ethylbenzene, and total Xylenes.
[5] Naphthalene can be reported as both a purgeable (VOC) and extractable (SVOC) organic compound. If both VOC and SVOC are analyzed, the highest value must be used unless the QC criteria for one of the analyses is not met. In such cases, the value from the analysis meeting the QC criteria must be used.
[6] The sum of individual phthalate compounds(not including the #34, Bis (2-Ethylhexyl) Phthalate . The compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.
Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measurement of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.
[7] Although the maximum value for the individual PAH compounds is 0.0038 ug/l, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.
[8] In the November 2002 WQC, EPA has revised the definition of Total PCBs for aquatic life as total PCBs is the sum of all homologue, all isomer, all congener, or all "Oroclor analyses."Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measure of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.
[9]Although the maximum value for total PCBs is 0.000064 ug/l, the compliance limit is equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., 0.5 ug/l for Method 608 or 0.00005 ug/l when Method 1668a is approved).
[10] Hardness. Cadmium, Chromium III, Copper, Lead, Nickel, Silver, and Zinc are Hardness Dependent.
[11] For a Dilution Factor (DF) from 1 to 5, metals limits are calculated using DF times the base limit for the metal. See Appendix IV. For example, iron limits are calculated using DF x 1,000ug/L (the iron base limit). Therefore DF is 1.5, the iron limit will be 1,500 ug/L; DF 2, then iron limit =1,000 x 2 =2,000 ug/L., etc. not to exceed the DF=5.
[12] Minimum Level (ML) is the lowest level at which the analytical system gives a recognizable signal and acceptable calibration point for the analyte. The ML represents the lowest concentration at which an analyte can be measured with a known level of confidence. The ML is calculated by multiplying the laboratory-determined method detection limit by 3.18 (see 40 CFR Part 136, Appendix B).
[13] pH sampling for compliance with permit limits may be performed using field methods as provided for in EPA test Method 150.1.
[14] Temperature sampling per Method 170.1

APPENDIX B

Notice of Intent (NOI)
for Remediation General Permit (RGP)

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:
Massachusetts Institute of Technology
MIT.nano Project - Phase III: North Corridor</td><td colspan="3">Site address: 60 Vassar Street
Street:</td></tr>
<tr><td>City: Cambridge</td><td>State: MA</td><td>Zip: 02139</td></tr>
<tr><td rowspan="4">2. Site owner
Massachusetts Institute of Technology

Owner is (check one): ☐ Federal ☐ State/Tribal ☐ Private
■ Other; if so, specify: Institution</td><td colspan="3">Contact Person: Phyllis Carter</td></tr>
<tr><td colspan="2">Telephone: 617.452.2508</td><td>Email: pcarter@MIT.EDU</td></tr>
<tr><td colspan="3">Mailing address: 77 Massachusetts Avenue
Building N52-496
Street:</td></tr>
<tr><td>City: Cambridge</td><td>State: MA</td><td>Zip: 02139</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
Turner Construction Company</td><td colspan="3">Contact Person: Dick Williamson</td></tr>
<tr><td colspan="2">Telephone: 617-247-6400</td><td>Email: rwilliamson@tcco.com</td></tr>
<tr><td colspan="3">Mailing address:
2 Seaport Lane
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:
MAG910620

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):
3-32224
☐ NH Groundwater Management Permit or Groundwater Release Detection Permit:
☐ CERCLA
☐ UIC Program
☐ POTW Pretreatment
☐ CWA Section 404</td></tr>
</table>

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
Charles River	MA72-36	Class B

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

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

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

3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP. The Lower Charles River is on the MA Integrated List and all uses are considered impaired. TMDL is available for Pathogens and Phosphorus.

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.	29.2
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.	88.36

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: 9/12/2017

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

C. Source water information:

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

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

2. Source water contaminants: Iron, Chromium, Arsenic, VOCs	
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): D08OF0010 No ID for second outfall. Private MIT Outfall	Outfall location(s): (Latitude, Longitude) 42.35509, -71.09036 42.35509, -71.09036 (private Outfall within 10 ft. +/- of D08OF0010 See Figure 2 of H&A Report)
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: ■ A private storm sewer system ■ A municipal storm sewer system Two outfalls are proposed, one City and one MIT 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: City of Cambridge Permit to Dewater being submitted concurrently with this application 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): October 2017-October 2018 Indicate if the discharge is expected to occur over a duration of: ☐ less than 12 months ■ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

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

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

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

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✔	1	4500NH3	75	858	858	Report mg/L	---
Chloride		✔	1	300.0	12500	461000	461000	Report µg/l	---
Total Residual Chlorine	✔		1	4500CL-D	20	0	0	0.2 mg/L	972 ug/L
Total Suspended Solids	✔		1	2540D	5000	94000	73000	30 mg/L	---
Antimony	✔		1	200.8	4	0	0	206 µg/L	56551 ug/L
Arsenic		✔	1	200.8	1	11.94	11.94	104 µg/L	884 ug/L
Cadmium	✔		1	200.8	0.2	0	0	10.2 µg/L	20.8984 ug/L
Chromium III	✔		1	200.8	10	0	0	323 µg/L	6561.2 ug/L
Chromium VI	✔		1	7196A	10	0	0	323 µg/L	1010.4 ug/L
Copper	✔		1	200.8	1	0	0	242 µg/L	299.5 ug/L
Iron		✔	1	200.7	50	859	859	5,000 µg/L	18909 ug/L
Lead	✔		1	200.8	0.5	0	0	160 µg/L	2.52 ug/L
Mercury	✔		1	245.1	0.2	0	0	0.739 µg/L	80.04 ug/L
Nickel	✔		1	200.8	2	0	0	1,450 µg/L	3952 ug/L
Selenium	✔		1	200.8	5	0	0	235.8 µg/L	441.8 ug/L
Silver	✔		1	200.8	0.4	0	0	35.1 µg/L	244.6 ug/L
Zinc	✔		1	200.8	10	0	0	420 µg/L	8087.3 ug/L
Cyanide	✔		1	4500CN	5	0	0	178 mg/L	459.5 ug/L
B. Non-Halogenated VOCs									
Total BTEX	✔		1	8260C	NA	0	0	100 µg/L	---
Benzene	✔		1	8260C	0.5	0	0	5.0 µg/L	---
1,4 Dioxane	✔		1	8260CSIM	3	0	0	200 µg/L	---
Acetone		✔	1	8260C	5	9.4	9.4	7.97 mg/L	---
Phenol	✔		1	8270D	4.9	0	0	1,080 µg/L	26508 ug/L

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
C. Halogenated VOCs									
Carbon Tetrachloride	✔		1	8260C	0.5	0	0	4.4 µg/L	141.4 ug/L
1,2 Dichlorobenzene	✔		1	8260C	2.5	0	0	600 µg/L	---
1,3 Dichlorobenzene	✔		1	8260C	2.5	0	0	320 µg/L	---
1,4 Dichlorobenzene	✔		1	8260C	2.5	0	0	5.0 µg/L	---
Total dichlorobenzene	✔							763 µg/L in NH	---
1,1 Dichloroethane	✔		1	8260C	0.75	0	0	70 µg/L	---
1,2 Dichloroethane	✔		1	8260C	0.5	0	0	5.0 µg/L	---
1,1 Dichloroethylene	✔		1	8260C	0.5	0	0	3.2 µg/L	---
Ethylene Dibromide	✔		1	8260C	2	0	0	0.05 µg/L	---
Methylene Chloride	✔		1	8260C	3	0	0	4.6 µg/L	---
1,1,1 Trichloroethane	✔		1	8260C	0.5	0	0	200 µg/L	---
1,1,2 Trichloroethane	✔		1	8260C	0.75	0	0	5.0 µg/L	---
Trichloroethylene		✔	1	8260C	0.5	0.85	0.85	5.0 µg/L	---
Tetrachloroethylene	✔		1	8260C	0.5	0	0	5.0 µg/L	291.6 ug/L
cis-1,2 Dichloroethylene		✔	1	8260C	0.5	1.0	1.0	70 µg/L	---
Vinyl Chloride	✔		1	8260C	1.0	0	0	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔							190 µg/L	
Diethylhexyl phthalate	✔		1	8270D	2.9	0	0	101 µg/L	194.4 ug/L
Total Group I PAHs	✔							1.0 µg/L	---
Benzo(a)anthracene		✔	1	8270DSIM	0.10	0	0	As Total PAHs	0.3358 ug/L
Benzo(a)pyrene		✔	1	8270DSIM	0.10	0	0		0.3358 ug/L
Benzo(b)fluoranthene		✔	1	8270DSIM	0.10	0	0		0.3358 ug/L
Benzo(k)fluoranthene		✔	1	8270DSIM	0.10	0	0		0.3358 ug/L
Chrysene		✔	1	8270DSIM	0.10	0	0		0.3358 ug/L
Dibenzo(a,h)anthracene	✔		1	8270DSIM	0.10	0	0		0.3358 ug/L
Indeno(1,2,3-cd)pyrene	✔		1	8270DSIM	0.10	0	0		0.3358 ug/L

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
Total Group II PAHs	✔							100 µg/L	---
Naphthalene	✔		1	8260C	2.5	0	0	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔		1	608	0.250	0	0	0.000064 µg/L	---
Pentachlorophenol	✔		1	8270DSIM	0.78	0	0	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✔		1	1664A	4400	0	0	5.0 mg/L	---
Ethanol	✔		1		2000	0	0	Report mg/L	---
Methyl-tert-Butyl Ether	✔		1	8260C	1.0	0	0	70 µg/L	1767 µg/L
tert-Butyl Alcohol	✔		1	8260C	10	0	0	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔		1	8260C	2.0	0	0	90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC_{50}, additional pollutants present); if so, specify:									
Salinity		✔	1	2520B	NA	0	0		
Hardness		✔	1	200.7	660	247000	247000		

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:
Granulated Activated Carbon (GAC), Ion Exchange and other treatments as needed to meet discharge criteria

2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge.
Influent - Frac. tank - bag filers - additional treatment as needed to meet discharge criteria - effluent. See attached Figure 2 for schematic drawing of treatment system

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.	150 gpm
Provide the average effluent flow in gpm.	50 gpm
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	NA

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

F. Chemical and additive information

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

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

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.	
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ☐ No ■
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐ NA ☐
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ■ No ☐ NA ☐
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Check one: Yes ☐ No ☐ NA ■
Signature: RJ Williamson	Date: 10/20/2017
Print Name and Title: Richard Williamson, Turner Construction Company	

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.

Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ☐ No ■
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐ NA ☐
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ■ No ☐ NA ☐
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Check one: Yes ☐ No ☐ NA ■

Signature: PBCarter Date: 10/20/2017

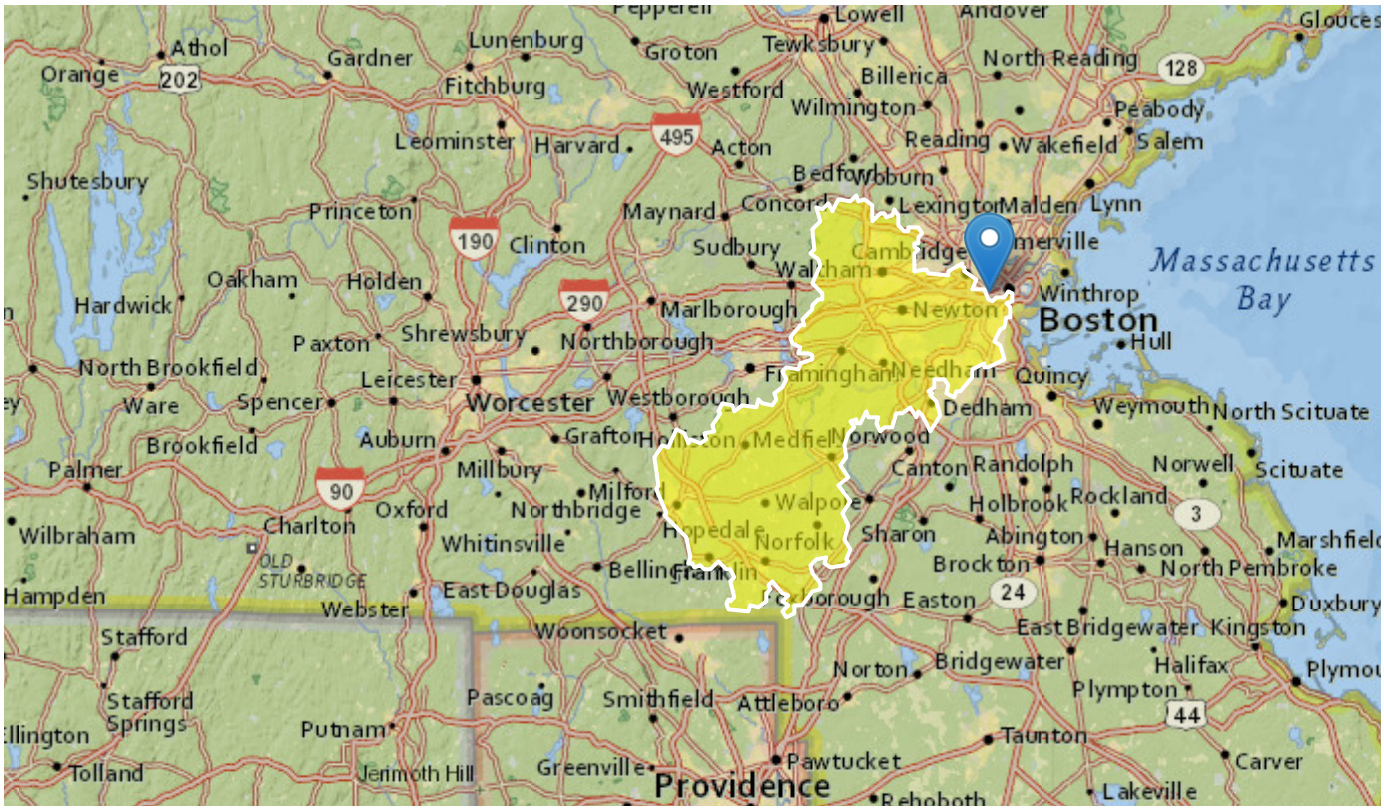
Print Name and Title: Phylis Carter, MIT EHS

APPENDIX C

Discharge Calculations

StreamStats Report

Region ID: MA
Workspace ID: MA20170911150207859000
Clicked Point (Latitude, Longitude): 42.35509, -71.09036
Time: 2017-09-11 15:03:10 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	307	square miles
BSLDEM250	Mean basin slope computed from 1:250K DEM	2.341	percent
DRFTPERSTR	Area of stratified drift per unit of stream length	0.25	square mile per mile
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	307	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	2.341	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	0.25	square mile per mile	0	1.29

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
MAREGION	Massachusetts Region	0	dimensionless	0	1

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

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

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	57.3	ft^3/s
7 Day 10 Year Low Flow	29.2	ft^3/s

Low-Flow Statistics Citations

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

HALEY & ALDRICH, INC.		**CALCULATIONS**	FILE NO.	36514-706
			SHEET	1 of 1
CLIENT	MASSACHUSETTS INSTITUTE OF TECHNOLOGY		DATE	11-Sep-17
PROJECT	MIT.nano Phase III - North Corridor		COMPUTED BY	KGD
SUBJECT	DILUTION FACTOR CALCULATIONS			

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

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

ASSUMPTIONS:
1. 7Q10 is 29.2 cfs (from StreamStats 4.0)
2. A conversion of 7.48 is used to convert cubic feet to gallons
3. A discharge flowrate of 150 gpm is assumed

CALCULATIONS:

7Q10 Low Flow Value (Q_S)

$$Q_S = \frac{29.2\ ft^3}{sec} \times \frac{7.48\ gallons}{ft^3} \times \frac{86{,}400\ sec}{day} \times \frac{1\ MG}{1{,}000{,}000\ gallons}$$

Q_S = 18.87 MGD

Discharge Flowrate (Q_D)

$$Q_D = \frac{150\ gallons}{min} \times \frac{1{,}440\ min}{day} \times \frac{1\ MG}{1{,}000{,}000\ gallons}$$

Q_D = 0.216 MGD

Dilution Factor (DF)

$$DF = \frac{Q_S + Q_D}{QD} = \frac{18.87\ MGD + 0.216\ MGD}{0.216\ MGD} = 88.36$$

CONCLUSION The dilution factor for this project is calculated to be 88.36 based on the provided 7Q10 low flow value and discharge flowrate.

Enter number values in green boxes below

Enter values in the units specified

↓

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

Enter a dilution factor, if other than zero

↓

88.36

Enter values in the units specified

↓

247	C_d = Enter influent hardness in **mg/L** $CaCO_3$
81.5	C_s = Enter receiving water hardness in **mg/L** $CaCO_3$

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

↓

7.66	pH in **Standard Units**
15.4	Temperature in **°C**
0.241	Ammonia in **mg/L**
81.5	Hardness in **mg/L** $CaCO_3$
0	Salinity in **ppt**
0	Antimony in **µg/L**
0	Arsenic in **µg/L**
0	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
4.65	Copper in **µg/L**
795	Iron in **µg/L**
3.56	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
11.31	Zinc in **µg/L**

Enter **influent** concentrations in the units specified

↓

0	TRC in **µg/L**
858000	Ammonia in **mg/L**
0	Antimony in **µg/L**
11.94	Arsenic in **µg/L**
0	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
0	Copper in **µg/L**
859	Iron in **µg/L**
0	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
0	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**
0.67	Benzo(a)anthracene in **µg/L**
0.72	Benzo(a)pyrene in **µg/L**
0.97	Benzo(b)fluoranthene in **µg/L**
0.35	Benzo(k)fluoranthene in **µg/L**
0.68	Chrysene in **µg/L**
0	Dibenzo(a,h)anthracene in **µg/L**
0.5	Indeno(1,2,3-cd)pyrene in **µg/L**
0	Methyl-tert butyl ether in **µg/L**

Notes:

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

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

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

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

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

Leave 0 if no entry

Freshwater only

pH, temperature, and ammonia required for all discharges

Hardness required for freshwater

Salinity required for saltwater (estuarine and marine)

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

Enter 0 if non-detect or testing not required

if >1 sample, enter maximum

if >10 samples, may enter 95th percentile

Enter 0 if non-detect or testing not required

Dilution Factor	88.4					
A. Inorganics	TBEL applies if bolded		WQBEL applies if bolded		Compliance Level applies if shown	
Ammonia	**Report**	mg/L	---			
Chloride	**Report**	µg/L	---			
Total Residual Chlorine	**0.2**	mg/L	972	µg/L	---	µg/L
Total Suspended Solids	**30**	mg/L	---			
Antimony	**206**	µg/L	56551	µg/L		
Arsenic	**104**	µg/L	884	µg/L		
Cadmium	**10.2**	µg/L	20.8984	µg/L		
Chromium III	**323**	µg/L	6561.2	µg/L		
Chromium VI	**323**	µg/L	1010.4	µg/L		
Copper	**242**	µg/L	299.5	µg/L		
Iron	**5000**	µg/L	18909	µg/L		
Lead	**160**	µg/L	2.52	µg/L		
Mercury	**0.739**	µg/L	80.04	µg/L		
Nickel	**1450**	µg/L	3952.0	µg/L		
Selenium	**235.8**	µg/L	441.8	µg/L		
Silver	**35.1**	µg/L	244.6	µg/L		
Zinc	**420**	µg/L	8087.3	µg/L		
Cyanide	**178**	mg/L	459.5	µg/L	---	µg/L
B. Non-Halogenated VOCs						
Total BTEX	**100**	µg/L	---			
Benzene	**5.0**	µg/L	---			
1,4 Dioxane	**200**	µg/L	---			
Acetone	**7970**	µg/L	---			
Phenol	**1,080**	µg/L	26508	µg/L		
C. Halogenated VOCs						
Carbon Tetrachloride	**4.4**	µg/L	141.4	µg/L		
1,2 Dichlorobenzene	**600**	µg/L	---			
1,3 Dichlorobenzene	**320**	µg/L	---			
1,4 Dichlorobenzene	**5.0**	µg/L	---			
Total dichlorobenzene	**---**	µg/L	---			
1,1 Dichloroethane	**70**	µg/L	---			
1,2 Dichloroethane	**5.0**	µg/L	---			
1,1 Dichloroethylene	**3.2**	µg/L	---			
Ethylene Dibromide	**0.05**	µg/L	---			
Methylene Chloride	**4.6**	µg/L	---			
1,1,1 Trichloroethane	**200**	µg/L	---			
1,1,2 Trichloroethane	**5.0**	µg/L	---			
Trichloroethylene	**5.0**	µg/L	---			
Tetrachloroethylene	**5.0**	µg/L	291.6	µg/L		
cis-1,2 Dichloroethylene	**70**	µg/L	---			
Vinyl Chloride	**2.0**	µg/L	---			
D. Non-Halogenated SVOCs						
Total Phthalates	**190**	µg/L	---	µg/L		
Diethylhexyl phthalate	**101**	µg/L	194.4	µg/L		
Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---			
Benzo(a)anthracene	1.0	µg/L	**0.3358**	µg/L	---	µg/L
Benzo(a)pyrene	1.0	µg/L	**0.3358**	µg/L	---	µg/L
Benzo(b)fluoranthene	1.0	µg/L	**0.3358**	µg/L	---	µg/L
Benzo(k)fluoranthene	1.0	µg/L	**0.3358**	µg/L	---	µg/L
Chrysene	1.0	µg/L	**0.3358**	µg/L	---	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.3358	µg/L	---	µg/L
Indeno(1,2,3-cd)pyrene	1.0	µg/L	**0.3358**	µg/L	---	µg/L
Total Group II Polycyclic Aromatic Hydrocarbons	**100**	µg/L	---			
Naphthalene	**20**	µg/L	---			
E. Halogenated SVOCs						
Total Polychlorinated Biphenyls	**0.000064**	µg/L	---		0.5	µg/L
Pentachlorophenol	**1.0**	µg/L	---			
F. Fuels Parameters						
Total Petroleum Hydrocarbons	**5.0**	mg/L	---			
Ethanol	**Report**	mg/L	---			
Methyl-tert-Butyl Ether	**70**	µg/L	1767	µg/L		
tert-Butyl Alcohol	**120**	µg/L	---			
tert-Amyl Methyl Ether	**90**	µg/L	---			

APPENDIX D

Permits

PERMIT TO DEWATER

Location: 60 Vassar Street

Owner: Massachusetts Institute of Technology (MIT)

Contractor: Turner Construction Company

Temporary

Permanent ☐

The property owner, Massachusetts Institute of Technology (MIT) agrees to hold harmless and indemnify the City of Cambridge for any liability on the part of the City directly or indirectly arising out of the dewatering operation.

The issuance of this permit is based in part in the submission packet of the applicant with documentation as follows:

NPDES RGP Permit Application: Notice of Intent (NOI), Temporary Construction Dewatering, Massachusetts Institute of Technology MIT.nano Project - Phase III: North Corridor, 60 Vassar Street Cambridge, Massachusetts dated 29 September 2017

In addition, the application has been reviewed by the City under third party agreement as documented in the following reports:

Not Applicable

All activities conducted in conjunction with the issuance of this permit must be in accordance with the provisions of the aforementioned reports. Any deviations in conditions must be reported to and approved by the Commissioner of Public Works.

This permit is in addition to any other street permit issued by the Department in connection with any street excavation or obstruction; and all conditions as specified in the Discharge Permit for Dewatering.

For the entire period of time the groundwater is being discharged to a storm drain, the property owner shall provide copies of each Discharge Monitoring Report Form submitted to the EPA, pursuant to the owner's discharge permit.

If in the future the EPA requires the City of Cambridge to bring existing stormwater drainage into compliance with EPA quality standards, as a condition to the continuation of discharge of that stormwater (also including groundwater) into an EPA regulated system into which the MIT (property owner) drains, the owner will agree to maintain its water discharge with such EPA water quality standards.

The property owner and contractor shall at all times meet the conditions specified in the requisite legal agreement/affidavits.

All groundwater pumped from the work shall be disposed of without damage to pavements, other surfaces or property.

Where material or debris has washed or flowed into or has been placed in existing gutters, drains, pipes or structures, such material or debris shall be entirely removed and satisfactorily disposed of by the

Contractor during the progress of work as directed by the Public Works Department.

Any flooding or damage of property and possessions caused by siltation of existing gutters, pipes or structures shall be the responsibility of the Contractor.

Provisions shall be made to insure that no material, water or solid, will freeze on any pavement or in any location which will cause inconvenience or hazard to the general public.

Upon completion of the work, existing gutters, drains, pipes and structures shall be (bucket) cleaned and material disposed of satisfactorily prior to release by the Public Works Department.

Any permit issued by the City of Cambridge shall be revoked upon transfer of any ownership interest unless and until subsequent owner(s) or parties of interest agree to the foregoing terms.

This permit shall remain in effect for one year and shall be renewable thereafter at the agreement of the parties.

The following special conditions as set forth below are part of the permit.

Not Applicable

City Manager	Property Manager: Corporate Entity President, General Partner or Trustee Trustee with Instrument of Authority
Date	Date
City Solicitor	Contractor
Date	Date
Commissioner of Public	Contractor
Date	Date

CC: Engineering
Supervisor of Sewer Maintenance and Engineering
Superintendent of Streets
Commissioner of Inspectional Services

Print Form

APPENDIX E

Best Management Practices Plan (BMPP)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
REMEDIATION GENERAL PERMIT
MIT.nano PROJECT
CAMBRIDGE, MASSACHUSETTS

Best Management Practices Plan

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

Water Treatment and Management

Construction dewatering effluent is anticipated to be pumped from well points installed in sump pits within the excavations, through hoses or temporary pipe, and directly into a tank for sedimentation control. The effluent will then flow through any necessary treatment systems and discharge through hoses or temporary piping to catch basins on site that discharge to the Charles River. Dewatering effluent treatment may consist of bag filters, granular activated carbon (GAC), ion exchange, or precipitation, as required.

Discharge Monitoring and Compliance

Regular sampling and testing will be conducted at the influent to the system and the treated effluent as required by the RGP. This includes chemical testing required within the first month of discharging, and the monthly testing to be conducted through the end of the scheduled discharge.

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

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

Monthly monitoring reports will be compiled and maintained at the site.

System Maintenance

A number of methods will be used to minimize the potential for violations for the term of this permit. Scheduled regular maintenance of the treatment system will be conducted to verify proper operation. Regular maintenance will include checking the condition of the treatment system equipment such as the fractionization tanks, filters, hoses, pumps, and flow meters. Equipment will be monitored daily for potential issues or unscheduled maintenance requirements.

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

Miscellaneous Items

It is anticipated that the excavation support system, erosion control measures, and the nature of the site and surrounding infrastructure will minimize potential runoff to or from the site. The project specifications also include requirements for erosion control. Site security for the treatment system will be covered within the overall site security plan.

No adverse affects on designated uses of surrounding surface water bodies is anticipated. The nearest surface water body is the Charles River, which is approximately 1 city block south of the project site. Dewatering effluent will be pumped to a sedimentation tank and bag filter, at a minimum, prior to discharge to the storm drains.

Management of Treatment System Materials

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

Sediment from the fractionization tank used in the treatment system will be characterized and removed from the site to an appropriate receiving facility, in accordance with applicable laws and regulations. If used, granular activated carbon and/or ion exchange resin may be recycled and/or removed from the site to an appropriate receiving facility. Bag filters, if used, will be disposed of as necessary.

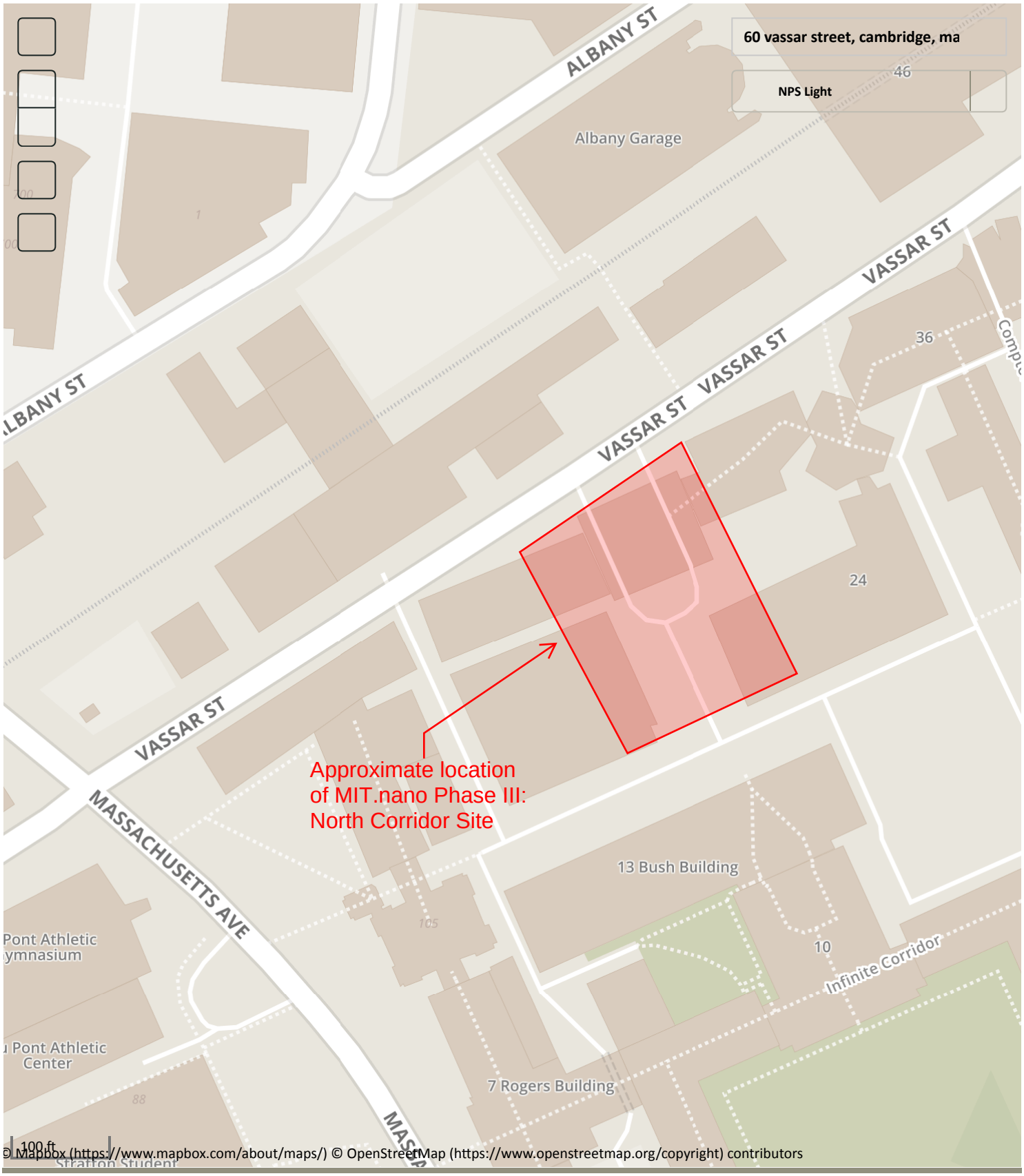
APPENDIX F

National Register of Historic Places and Massachusetts Historical Commission Documentation

National Register of Histori...

National Park Service
U.S. Department of the Interior

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



Nation Register of Historic Places Data Base fo Cambridge, MA

Reference Number	Resource Name	Address	State	County	City	Primary Cert	Primary Certdate	Multiple Property Name
79000354	Abbot, Edwin, House	1 Follen St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19790510	
82001883	Aborn, John, House	41 Orchard St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
04000249	Alewife Brook Parkway	Alewife Brook Parkway	MASSACHUSETTS	Middlesex	Cambridge	LI	20040318	Metropolitan Park System of Greater Boston MPS
82001908	Almshouse	41 Orchard St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001906	American Net and Twine Company Factory	155 2nd St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820401	Cambridge MRA
82001916	Ash Street Historic District	Ash St. and Ash St. Place between Brattle and Mount Auburn Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001917	Athenaeum Press	215 1st St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
83000781	Atwood, Ephraim, House	110 Hancock St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
72000128	Austin Hall	Harvard University campus	MASSACHUSETTS	Middlesex	Cambridge	LI	19720419	
83000782	Avon Hill Historic District	Washington and Walnut Aves. and Agassiz, Humboldt, Arlington and Lancaster Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
82001918	B and B Chemical Company	780 Memorial Dr.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
76000272	Baldwin, Maria, House	196 Prospect St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19760511	
82001919	Barnes, James B., House	200 Monsignor O'Brien Hwy.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
96000520	Beck--Warren House	1 Prescott St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19960520	Cambridge MRA
86001272	Bennink--Douglas Cottages	35--51 Walker St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
82001920	Berkeley Street Historic District	Berkeley St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
86001265	Berkeley Street Historic District (Boundary Increase)	1--8 Berkeley Pl.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
86001270	Bertram Hall at Radcliffe College	53 Shepard St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
82001921	Beth Israel Synagogue	238 Columbia St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001922	Bigelow Street Historic District	Bigelow St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001923	Billings, Frederick, House	45 Orchard St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
75000295	Birkhoff, George D., House	22 Craigie	MASSACHUSETTS	Middlesex	Cambridge	LI	19750515	
97000561	Blake and Knowles Steam Pump Company National Register District	Bounded by Third, Binney, Fifth, and Rogers Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19970613	
82001924	Bottle House Block	204-214 3rd St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
86001276	Brabrook, E. H., House	42--44 Avon St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
83000784	Bradbury, William F., House	369 Harvard St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
82001925	Brattle Hall	40 Brattle St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
73000286	Brattle, William, House	42 Brattle St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19730508	
75000298	Bridgman, Percy, House	10 Buckingham Pl.	MASSACHUSETTS	Middlesex	Cambridge	LI	19750515	
86002068	Brooks, Luther, House	34 Kirkland St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860912	Cambridge MRA
82001926	Building at 10 Follen Street	10 Follen St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA

83000790	Building at 102-104 Inman Street	102-104 Inman St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
83000789	Building at 104-106 Hancock Street	104-106 Hancock St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
82001927	Building at 106-108 Inman St	106-108 Inman St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
83000787	Building at 1707-1709 Cambridge Street	1707-1709 Cambridge St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
83000788	Building at 1715-1717 Cambridge Street	1715-1717 Cambridge St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
83000786	Building at 259 Mount Auburn Street	259 Mt. Auburn St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
82001928	Building at 42 Edward J. Lopez Avenue	42 Edward J. Lopez Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001929	Buildings at 110-112 Inman St.	110-112 Inman St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001930	Buildings at 15-17 Lee St.	15-17 Lee St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
83004293	Cambidge Common Historic District Amendment	Massachusetts Ave. and Garden, Waterhouse, Cambridge, and Peabody Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
73000281	Cambridge Common Historic District	Garden, Waterhouse, Cambridge, and Peabody Sts., and Massachusetts Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19730413	Cambridge MRA
87000499	Cambridge Common Historic District (Boundary Increase and Decrease)	Roughly NW of Waterhouse St. on Concord Ave. between Garden and Follen Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19870126	Cambridge MRA
02001189	Cambridge Home for the Aged and Infirm	650 Concord Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	20021022	
82001931	Cambridge Public Library	449 Broadway St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
78000435	Carpenter Center for the Visual Arts	19 Prescott St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19780420	
90000128	Central Square Historic District	Roughly Massachusetts Ave. from Clinton St. to Main St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19900302	Cambridge MRA
78000436	Charles River Basin Historic District	Both banks of Charles River from Eliot Bridge to Charles River Dam	MASSACHUSETTS	Middlesex	Cambridge	LI	19781222	
83000791	Child, Francis J., House	67 Kirkland St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
66000140	Christ Church	Garden St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19661015	
83000792	Church of the New Jerusalem	50 Quincy St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
82001932	City Hall Historic District	Massachusetts Ave., Bigelow and Temple Sts, Inman and Richard Allen Dr.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
83000793	Cloverden	29 Fallen St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
82004968	Colburn, Sarah Foster, House	7 Dana St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001933	Conventual Church of St. Mary and St. John	980 Memorial Dr.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001934	Cook, William, House	71 Appleton St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
83000795	Coolidge, Josiah, House	24 Coolidge Hill Rd.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA

72000124	Cooper-Frost-Austin House	21 Linnaean St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19720922	
79000363	Cornerstone Baptist Church	2114 Massachusetts Ave.	MASSACHUSETTS	Middlesex	Cambridge	RN	19800121	
86001575	Craigie Arms	2--6 University Rd., 122 Mt. Auburn, and 6 Bennett Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860710	Cambridge MRA
83000796	cummings, e.e., House	104 Irving St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
76000305	Daly, Reginald A., House	23 Hawthorn St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19760107	
86001682	Dana--Palmer House	12--16 Quincy St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
76000306	Davis, William Morris, House	17 Francis St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19760107	
82001935	Day, Anna, House	139 Cushing St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001936	Deane-Williams House	21-23 Fayette St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
90000142	DeRosay--McNamee House	50 Mt. Vernon St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19900302	Cambridge MRA
86002071	Divinity Hall	12 Divinity Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860912	Cambridge MRA
82001937	Dodge, Edward, House	70 Sparks St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
86001279	Dunvegan, The	1654 Massachusetts Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
83000797	East Cambridge Historic District	Roughly bounded by Cambridge, Hurley and 5th Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
82001938	East Cambridge Savings Bank	292 Cambridge St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
86001280	Eliot Hall at Radcliffe College	51 Shepard St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
83000798	Ellis, Asa, House	158 Auburn St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
66000364	Elmwood	33 Elmwood Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19661015	
82001939	Farwell, R.H., House	2222-2224 Massachusetts Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
83000799	Fay, Issac, House	123 Antrim St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
75000249	First Baptist Church	Magazine and River Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19750414	
83000800	Flentje, Ernst, House	129 Magazine St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
86001282	Fogg Art Museum	26--32 Quincy St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
86001681	Follen Street Historic District	1--44 and 5--29 Follen St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
73000284	Fort Washington	95 Waverly St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19730403	
82001940	Fresh Pond Hotel	234 Lakeview Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
04001429	Fresh Pond Parkway--Metropolitan Park System of Greater Boston	Fresh Pond Parkway	MASSACHUSETTS	Middlesex	Cambridge	LI	20050105	Metropolitan Park System of Greater Boston MPS
83000801	Frost, David, House	26 Gray St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
83000802	Frost, Elizabeth, Tenanthouse	35 Bowdoin St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
82001941	Frost, Robert, House	29-35 Brewster St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001942	Frost, Walter, House	10 Frost St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
71000686	Fuller, Margaret, House	71 Cherry St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19710702	
87002543	Gale, George, House	14--16 Clinton St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19880210	Cambridge MRA
83000803	Garfield Street Historic District	Garfield St. between Massachusetts Ave. and Oxford St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
86001283	Gray Gardens East and West Historic District	1--37 Gray Gardens E, 3--24 Gray Gardens W, 91 Garden and 60 Raymond Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
66000655	Gray, Asa, House	88 Garden St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19661015	
82001943	Greek Revival Cottage	59 Rice St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA

83000806	Hall Tavern	20 Gray Gardens West St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
86001284	Hapgood, Richard, House	382--392 Harvard St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
86002073	Harvard Houses Historic District	Roughly bounded by Mt. Auburn & Grant & Cowperwaite Sts., Banks St. & Putman Ave., the Memorial River, & Boyleston St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860912	Cambridge MRA
78000440	Harvard Lampoon Building	44 Bow St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19780330	
82001944	Harvard Square Historic District	Massachusetts Ave., Boylston and Brattle Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
86003654	Harvard Square Historic District (Boundary Increase)	Roughly bounded by Harvard & Massachusetts Aves., Mt. Auburn, Winthrop, Bennett, Story & Church Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19880728	Cambridge MRA
78000441	Harvard Square Subway Kiosk	Massachusetts Ave. and Boylston St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19780130	
82001945	Harvard Street Historic District	Harvard St. Between Ellery and Hancock Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
87000500	Harvard Union	Quincy and Harvard Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19870126	Cambridge MRA
87002137	Harvard Yard Historic District	Roughly bounded by underpass, Broadway & Quincy Sts., Massachusetts Ave., & Peabody St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19871214	Cambridge MRA
82001946	Hastings Square Historic District	Roughly bounded by Rockingham, Henry, Chestnut and Brookline Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
70000681	Hastings, Oliver, House	101 Brattle St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19701230	
78000442	Hasty Pudding Club	12 Holyoke St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19780109	
82001947	Henderson Carriage Repository	2067-2089 Massachusetts Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001948	Higginson, Col. Thomas Wentworth, House	29 Buckingham St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
83000807	Hill, Aaron, House	17 Brown St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
83000808	Holmes, Joseph, House	144 Coolidge Hill St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
83004030	Homer-Lovell House	11 Forest St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19831222	Cambridge MRA
83000809	Hooper-Eliot House	25 Reservoir Rd.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
79000355	Hooper-Lee Nichols House	159 Brattle St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19790615	
83000811	Howe House	6 Appleton St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
82001949	Howells, William Dean, House	37 Concord Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001953	Hoyt, Benjamin, House	134 Otis St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001950	Hubbard Park Historic District	Hubbard Park, Mercer Circle and Sparks Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001951	Inman Square Historic District	Hampshire, Cambridge, and Inman Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
86001308	Jarvis, The	27 Everett St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
83000813	Jones, William R., House	307 Harvard St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA

89002285	Kennedy, F. A., Steam Bakery	129 Franklin St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19900104	
82001952	Kidder-Sargent-McCrehan House	146 Rindge Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001954	Kingsley, Chester, House	10 Chester St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
86001683	Kirkland Place Historic District	Kirkland Pl.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
82001955	Lamson, Rufus, House	72-74 Hampshire St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001956	Larches, The	22 Larch Rd.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001957	Lechmere Point Corporation Houses	45-51 Gore St. and 25 3rd St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
76001970	Little, Arthur D., Inc., Building	Memorial Dr.	MASSACHUSETTS	Middlesex	Cambridge	LI	19761208	
86002070	Littlefield--Roberts House	16 Prescott St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860912	Cambridge MRA
66000049	Longfellow National Historic Site	105 Brattle St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19661015	
83000814	Lovell Block	1853 Massachusetts Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
86002076	Lovering, Joseph, House	38 Kirkland St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860912	Cambridge MRA
82001958	Lowell School	25 Lowell St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
83000815	Lowell, The	33 Lexington Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
83000816	Maple Avenue Historic District	Maple Ave. between Marie Ave. and Broadway	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
82001959	Mason, Josiah, Jr., House	11 Market St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
83000817	Mason, W. A., House	87 Raymond St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
66000769	Massachusetts Hall, Harvard University	Harvard University Yard	MASSACHUSETTS	Middlesex	Cambridge	LI	19661015	
82001960	McLean, Isaac, House	2218 Massachusetts Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001961	Mead, Alpheus, House	2200 Massachusetts Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001962	Melvin, Isaac, House	19 Centre St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
86001310	Memorial Drive Apartments Historic District	983--984, 985--986, 987--989, and 992--993 Memorial Dr.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
70000685	Memorial Hall, Harvard University	Cambridge and Quincy Sts., Harvard University campus	MASSACHUSETTS	Middlesex	Cambridge	LI	19701230	
86001311	Montrose, The	1648 Massachusetts Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
75000254	Mount Auburn Cemetery	580 Mount Auburn St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19750421	
83000818	Mount Auburn Cemetery Reception House	583 Mt. Auburn St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
05001209	New England Confectionery Company Factory	250 Massachusetts Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	20051109	
82001963	Newman, Andrew, House	23 Fairmont St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001964	Norfolk Street Historic District	Norfolk St. between Suffolk and Austin Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
83000819	North Avenue Congregational Church	183 Massachusetts Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
82001965	Noyes, J.A., House	1 Highland St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001967	Odd Fellows Hall	536 Massachusetts Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001968	Old Cambridge Baptist Church	398 Harvard St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
83000821	Old Cambridge Historic District	Irregular pattern along Brattle St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA

83000820	Old Cambridgport Historic District	Cherry, Harvard and Washington Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
73000287	Old Harvard Yard	Massachusetts Ave. and Cambridge St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19730206	
82001969	Opposition House	2-4 Hancock Pl.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
83000822	Orne, Sarah, House	10 Coolidge Hill Rd.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
86001312	Peabody Court Apartments	41--43 Linnaean St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
83000824	Porcellian Club	1320-24 Massachusetts Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
73000288	Pratt, Dexter, House	54 Brattle St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19730508	
82001970	Prospect Congregational Church	99 Prospect St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001971	Read, Cheney, House	135 Western Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001972	Reardon, Edmund, House	195 Erie St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
85002663	Reversible Collar Company Building	25--27 Mt. Auburn & 10--12 Arrow Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19850927	Cambridge MRA
76001999	Richards, Theodore W., House	15 Follen St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19760107	
82001973	River Street Firehouse	176 River St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001974	Sacred Heart Church, Rectory, School and Convent	6th and Thorndike Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001975	Salem-Auburn Streets Historic District	Salem and Auburn Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
76000238	Sands, Hiram, House	22 Putnam Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19760430	
82001976	Sands, Ivory, House	145 Elm St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
83000825	Saunders, William, House	6 Prentiss St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
86002075	Sears Tower--Harvard Observatory	60 Garden St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19870226	Cambridge MRA
83000826	Second Cambridge Savings Bank Building	11-21 Dunster St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
83000827	Second Waterhouse House	9 Follen St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
70000732	Sever Hall, Harvard University	Harvard Yard	MASSACHUSETTS	Middlesex	Cambridge	LI	19701230	
86001680	Shady Hill Historic District	Roughly bounded by Museum, Beacon and Holden, and Kirkland Sts., and Francis Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
94000546	Shell Oil Company "Spectacular" Sign	187 Magazine St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19940603	
82001977	Slowey, Patrick, House	73 Bolton St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001978	Soule, Lawrence, House	11 Russell St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
83000828	St. James Episcopal Church	1991 Massachusetts Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
83000829	St. John's Roman Catholic Church	2270 Massachusetts Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
86001313	Stanstead, The	19 Ware St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
86001315	Stickney--Shepard House	11--13 Remington St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
89001246	Stoughton, Mary Fisk, House	90 Brattle St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19890629	
82001979	Taylor Square Firehouse	113 Garden St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
86002078	Treadwell--Sparks House	21 Kirkland St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860912	Cambridge MRA
82001980	Union Railway Car Barn	613-621 Cambridge St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA

70000736	University Hall, Harvard University	Harvard Yard	MASSACHUSETTS	Middlesex	Cambridge	LI	19701230	
86002081	University Museum	11--25 Divinity Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860912	Cambridge MRA
82001981	Upper Magazine Street Historic District	Cottage, Magazine, William and Perry Sts.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
83000831	Urban Rowhouse	26-32 River St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
82001982	Urban Rowhouse	40-48 Pearl St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001983	Urban Rowhouse	30-38 Pearl St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
86001343	US Post Office--Central Square	770 Massachusetts Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860618	
83000832	Valentine Soap Workers Cottage	5-7 Cottage St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
83000833	Valentine Soap Workers Cottage	101 Pearl St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
83000834	Vinal, Albert, House	325 Harvard St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
94000554	Walden Street Cattle Pass	Adjacent to MBTA right-of-way at Walden St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19940603	Cambridge MRA
83000835	Ware Hall	383 Harvard St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19830630	Cambridge MRA
86001317	Warren, Langford H., House	6 Garden Terr.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
82001984	Watson, Abraham, House	181-183 Sherman St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001985	Willis, Stillman, House	1 Potter Park	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001986	Winter Street Historic District	Winter St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
86001318	Withey, S. B., House	10 Appian Way	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
86001319	Wood, J. A., House	3 Sacramento St.	MASSACHUSETTS	Middlesex	Cambridge	LI	19860519	Cambridge MRA
82001987	Wyeth Brickyard Superintendent's House	336 Rindge Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001988	Wyeth, John, House	56 Aberdeen Ave.	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA
82001989	Wyeth-Smith House	152 Vassal Lane	MASSACHUSETTS	Middlesex	Cambridge	LI	19820413	Cambridge MRA

Massachusetts Historical Commission

William Francis Galvin, Secretary of the Commonwealth

Massachusetts Cultural Resource Information System

MACRIS

Scanned forms and photos now available for selected towns!

The Massachusetts Cultural Resource Information System (MACRIS) allows you to search the Massachusetts Historical Commission database for information on historic properties and areas in the Commonwealth.

Users of the database should keep in mind that it does not include information on all historic properties and areas in Massachusetts, nor does it reflect all the information on file on historic properties and areas at the Massachusetts Historical Commission.

Click here to begin your search of the MACRIS database.

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Cambridge; Resource Type(s): Area, Building, Structure;

Inv. No.	Property Name	Street	Town	Year
CAM.A	Cambridge Common Historic District		Cambridge	
CAM.B	Lockhart, William L. and Company Coffin Factory		Cambridge	
CAM.C	Blake and Knowles Steam Pump Company		Cambridge	
CAM.D	Fort Washington Historic District		Cambridge	
CAM.E	East Cambridge Historic District		Cambridge	
CAM.F	Winter Street Historic District		Cambridge	
CAM.G	Cambridge Multiple Resource Area		Cambridge	
CAM.H	Lechmere Point Corporation Houses		Cambridge	
CAM.I	Sacred Heart Church, Rectory, School and Convent		Cambridge	
CAM.J	Upper Magazine Street Historic District		Cambridge	
CAM.K	Hastings Square Historic District		Cambridge	
CAM.L	Salem - Auburn Streets Historic District		Cambridge	
CAM.M	Inman Square Historic District		Cambridge	
CAM.N	Old Cambridgeport Historic District		Cambridge	
CAM.O	Norfolk Street Historic District		Cambridge	
CAM.P	Massachusetts Institute of Technology		Cambridge	
CAM.Q	Central Square Historic District		Cambridge	
CAM.R	Bigelow Street Historic District		Cambridge	
CAM.S	Garfield Street Historic District		Cambridge	
CAM.T	Harvard Street Historic District		Cambridge	
CAM.U	Kirkland Place Historic District		Cambridge	
CAM.V	Maple Avenue Historic District		Cambridge	
CAM.W	City Hall Historic District		Cambridge	
CAM.X	Shady Hill Historic District		Cambridge	
CAM.Y	Ash Street Historic District		Cambridge	
CAM.Z	Avon Hill Historic District		Cambridge	

Inv. No.	Property Name	Street	Town	Year
CAM.AA	Berkeley Street Historic District		Cambridge	
CAM.AB	Harvard Square Historic District		Cambridge	
CAM.AC	Harvard Houses Historic District		Cambridge	
CAM.AD	Harvard Yard Historic District		Cambridge	
CAM.AE	Old Cambridge Historic District		Cambridge	
CAM.AF	Gray Gardens East and West Historic District		Cambridge	
CAM.AG	Memorial Drive Apartments Historic District		Cambridge	
CAM.AH	Follen Street Historic District		Cambridge	
CAM.AI	Bennink - Douglas Cottages		Cambridge	
CAM.AJ	Charles River Basin Historic District		Cambridge	
CAM.AK	Boston Woven Hose and Rubber Complex		Cambridge	
CAM.AL	Fresh Pond		Cambridge	
CAM.AM	Old Cambridge Historic District		Cambridge	
CAM.AN	Harvard Riverfront		Cambridge	
CAM.AO	East Cambridge		Cambridge	
CAM.AP	Hubbard Park Historic District		Cambridge	
CAM.AQ	Davenport - Allen and Endicott Factory		Cambridge	
CAM.AR	Mount Auburn Cemetery		Cambridge	
CAM.AS	Metropolitan Park System of Greater Boston		Cambridge	
CAM.AT	Elmwood (James Russell Lowell House)		Cambridge	
CAM.AU	Christ Church		Cambridge	
CAM.AV	Blake and Knowles Steam Pump Company		Cambridge	
CAM.AW	Alewife Brook Parkway		Cambridge	
CAM.AX	Fresh Pond Parkway		Cambridge	
CAM.AY	Church of the Blessed Sacrament Catholic Church		Cambridge	
CAM.AZ	Immaculate Conception Roman Catholic Church		Cambridge	
CAM.BA	Immaculate Conception (Lithuanian) Catholic Church		Cambridge	
CAM.BB	Orchard Street Area		Cambridge	
CAM.BC	Central Square Historic District		Cambridge	
CAM.BD	Cambridge Common Historic District		Cambridge	
CAM.BE	Old Harvard Yard		Cambridge	
CAM.BF	Berkeley Street Historic District		Cambridge	
CAM.BG	Harvard Square Historic District		Cambridge	
CAM.1	Wyeth, John House	56 Aberdeen Ave	Cambridge	1841
CAM.1009		24 Agassiz St	Cambridge	1889
CAM.1010	Shaw, Edward L. House	30 Agassiz St	Cambridge	1890

Inv. No.	Property Name	Street	Town	Year
CAM.1011	Sands, M. Winslow House	32 Agassiz St	Cambridge	1891
CAM.1012	Blackman, Horace House	33 Agassiz St	Cambridge	1890
CAM.1353	Standard Plate Glass Company Building	270 Albany St	Cambridge	1920
CAM.902	Alewife Brook Parkway Bridge over B & M Railroad	Alewife Brook Pkwy	Cambridge	1929
CAM.903	Alewife Brook Parkway Bridge over B & M Railroad	Alewife Brook Pkwy	Cambridge	1929
CAM.9012	Alewife Brook Parkway - Northern Segment	Alewife Brook Pkwy	Cambridge	1908
CAM.9013	Alewife Brook Parkway Tree Border	Alewife Brook Pkwy	Cambridge	1920
CAM.1372	Immaculate Conception Roman Catholic Church	45 Alewife Brook Pkwy	Cambridge	1929
CAM.1373	Immaculate Conception Catholic Church Rectory	45 Alewife Brook Pkwy	Cambridge	1935
CAM.359		6-24 Allston St	Cambridge	1946
CAM.2	Fay, Isaac House	125 Antrim St	Cambridge	1843
CAM.3	Withey, S. B. House	10 Appian Way	Cambridge	1855
CAM.4	Howe, Lois Lilly House	6 Appleton St	Cambridge	1887
CAM.5	Cook, William House	71 Appleton St	Cambridge	1876
CAM.1016		8-10 Arlington St	Cambridge	1864
CAM.1027	Aldrich, Frank A. House	11 Arlington St	Cambridge	1899
CAM.1017		12-14 Arlington St	Cambridge	1864
CAM.1028	Graustein, Adolph H. House	19 Arlington St	Cambridge	1902
CAM.1018		22 Arlington St	Cambridge	1862
CAM.1019	Fillmore, Wellington House	24 Arlington St	Cambridge	1869
CAM.1347		25 Arlington St	Cambridge	
CAM.1020	Moor, Rev. Clark House	26 Arlington St	Cambridge	1869
CAM.1021	Blackman, Horace P. House	28 Arlington St	Cambridge	1876
CAM.1022		30 Arlington St	Cambridge	1876
CAM.1023	Jameson, Edwin A. L. House	32 Arlington St	Cambridge	1872
CAM.1029	Davis, John House	33 Arlington St	Cambridge	1869
CAM.1024		36 Arlington St	Cambridge	1872
CAM.1030	Kelsey, Albert House	37 Arlington St	Cambridge	1875
CAM.1025	Moor, Rev. Clark Double House	38-40 Arlington St	Cambridge	1874
CAM.1026	Boardman, Charles House	42 Arlington St	Cambridge	1871
CAM.1061	Harvard Catholic Student Center	20 Arrow St	Cambridge	1890
CAM.1062	Saint Paul's Church	24 Arrow St	Cambridge	1920
CAM.784	Brooks, John House	5 Ash St	Cambridge	1887
CAM.6	Johnson, Philip House	9 Ash St	Cambridge	1942
CAM.785	Ela, Lucia House	13 Ash St	Cambridge	1869
CAM.787	Eliot, T. S. House	16 Ash St	Cambridge	1855

Inv. No.	Property Name	Street	Town	Year
CAM.786	Nowell, Henry House	19 Ash St	Cambridge	1825
CAM.788	Hunnewell, James A. House	6 Ash Street Pl	Cambridge	1848
CAM.522		107 Auburn St	Cambridge	1803
CAM.523		108-110 Auburn St	Cambridge	1803
CAM.524		114 Auburn St	Cambridge	1844
CAM.525		119 Auburn St	Cambridge	1829
CAM.526		122 Auburn St	Cambridge	1840
CAM.527		131 Auburn St	Cambridge	1830
CAM.528		134 Auburn St	Cambridge	1845
CAM.7	Ellis, Asa House	158 Auburn St	Cambridge	1805
CAM.564	Hotel Eliot	66 Austin St	Cambridge	1885
CAM.565	Hotel Austin	70 Austin St	Cambridge	1885
CAM.8	Brabrook, Ezra H. House	42-44 Avon St	Cambridge	1849
CAM.352	Blake and Knowles Main Foundry	180 Bent St	Cambridge	1895
CAM.1035		1 Berkeley Pl	Cambridge	1892
CAM.1036		2 Berkeley Pl	Cambridge	1892
CAM.1037		3 Berkeley Pl	Cambridge	1892
CAM.1038		4 Berkeley Pl	Cambridge	1910
CAM.1039		5 Berkeley Pl	Cambridge	1900
CAM.1040		6 Berkeley Pl	Cambridge	1914
CAM.1041		7 Berkeley Pl	Cambridge	1913
CAM.1042		8 Berkeley Pl	Cambridge	1931
CAM.1043	Pryor - Brown House	1 Berkeley St	Cambridge	1852
CAM.10	Thayer, Prof. Studio	2 1/2 Berkeley St	Cambridge	1894
CAM.1044	Pryor - Howells House	3 Berkeley St	Cambridge	1856
CAM.1045	Dana, Richard H. House	4 Berkeley St	Cambridge	1851
CAM.1046	Wyeth - Allen House	5-7R Berkeley St	Cambridge	1852
CAM.1047		6 Berkeley St	Cambridge	1853
CAM.1048	Ware, Henry House	8 Berkeley St	Cambridge	1859
CAM.1049	Allyn, John House	11 Berkeley St	Cambridge	1886
CAM.1050		12 Berkeley St	Cambridge	1881
CAM.1051		13 Berkeley St	Cambridge	1898
CAM.1052	Williston, Lyman House	15 Berkeley St	Cambridge	1863
CAM.1053		16 Berkeley St	Cambridge	1905
CAM.1054		17 Berkeley St	Cambridge	1863
CAM.1055		19 Berkeley St	Cambridge	1854
CAM.1056	Newell, William House	20 Berkeley St	Cambridge	1856
CAM.1057		21 Berkeley St	Cambridge	1854

Inv. No.	Property Name	Street	Town	Year
CAM.1058	Fiske, John House	22 Berkeley St	Cambridge	1877
CAM.1059		23 Berkeley St	Cambridge	1854
CAM.1060		24 Berkeley St	Cambridge	1936
CAM.1355	Craft, William House	5 Bigelow St	Cambridge	1869
CAM.1356	Sharry, William J. House	5A Bigelow St	Cambridge	1940
CAM.663	Montague, Charles House	6 Bigelow St	Cambridge	1873
CAM.655	Snow, Simeon House	7 Bigelow St	Cambridge	1869
CAM.1360	Rhodes, Silas Jr. House	8 Bigelow St	Cambridge	1871
CAM.656	Pollard, John Double House	9-11 Bigelow St	Cambridge	1874
CAM.664	Hurd, Theodore House	10-12 Bigelow St	Cambridge	1884
CAM.657	Bird, Henry House	13 Bigelow St	Cambridge	1874
CAM.1361	Pike, Walter House	14 Bigelow St	Cambridge	1888
CAM.658	Davis, Curtis House	15 Bigelow St	Cambridge	1873
CAM.1362	Brazier, Abbie House	16 Bigelow St	Cambridge	1874
CAM.659	Whitely, Hiram House	17 Bigelow St	Cambridge	1873
CAM.1363	Sawyer - Dole House	18 Bigelow St	Cambridge	1876
CAM.1357	Oxford, Charles House	19 Bigelow St	Cambridge	1871
CAM.660	Snow - Twitchell Double House	21-23 Bigelow St	Cambridge	1873
CAM.665	Hyde, Edward House	22 Bigelow St	Cambridge	1870
CAM.1348	Robbins Block	24-46 Bigelow St	Cambridge	1871
CAM.661	Jessop, Joseph House	25 Bigelow St	Cambridge	1872
CAM.1358	Jessop Tenement House	29 Bigelow St	Cambridge	1891
CAM.1359	Whitcomb, Peter Double House	31-33 Bigelow St	Cambridge	1872
CAM.662	Davis, John W. House	35 Bigelow St	Cambridge	1870
CAM.357	Blake and Knowles Machine Shop #2	195 Binney St	Cambridge	1917
CAM.358	Blake and Knowles Machine Shop #3	199 Binney St	Cambridge	1918
CAM.356	Blake and Knowles Erecting and Assembling Building	201 Binney St	Cambridge	1903
CAM.1388		39 Bishop Allen Dr	Cambridge	
CAM.1397	Hotel Greyburn	77 Bishop Allen Dr	Cambridge	1891
CAM.577	Young Women's Christian Association Building	146 Bishop Allen Dr	Cambridge	1954
CAM.1386	Squirrel Brand Company Building	8 Boardman St	Cambridge	1915
CAM.11	Slowey, Patrick House	73 Bolton St	Cambridge	1852
CAM.1063	Bicycle Exchange Building	3-7 Bow St	Cambridge	1901
CAM.1064		9 Bow St	Cambridge	1884
CAM.1065	Farwell - Russell, Thomas Store	12 Bow St	Cambridge	1830
CAM.1066	Westmorly Court - Harvard University	15-29 Bow St	Cambridge	1898
CAM.12	Harvard Lampoon Building	44 Bow St	Cambridge	1909

Inv. No.	Property Name	Street	Town	Year
CAM.1067	Randolph Hall - Harvard University	47-57 Bow St	Cambridge	1897
CAM.13	Frost, Elizabeth Tenant House	35 Bowdoin St	Cambridge	1812
CAM.926	Anderson, Larz Bridge	Boylston St	Cambridge	1915
CAM.14	Hicks, John House	64 Boylston St	Cambridge	1761
CAM.294	Radcliffe College Graduate Center	Brattle St	Cambridge	1955
CAM.918	Longfellow Park	Brattle St	Cambridge	1887
CAM.987	Lowell Park	Brattle St	Cambridge	
CAM.1068	Brattle Building	4 Brattle St	Cambridge	1913
CAM.1069	Atrium Building	9-11 Brattle St	Cambridge	1979
CAM.1071		12-16 Brattle St	Cambridge	1887
CAM.1070	Estes Block	13-15 Brattle St	Cambridge	1875
CAM.1072	Dow Block	17-35 Brattle St	Cambridge	1936
CAM.1073		18 Brattle St	Cambridge	1922
CAM.1074		26 Brattle St	Cambridge	1909
CAM.1075	Hadley Building	28-36 Brattle St	Cambridge	1974
CAM.1076	Cambridge Federal Savings Bank	38A Brattle St	Cambridge	1937
CAM.1077		39-41 Brattle St	Cambridge	1925
CAM.15	Brattle Hall	40 Brattle St	Cambridge	1889
CAM.1078		40A Brattle St	Cambridge	1925
CAM.16	Brattle, William House	42 Brattle St	Cambridge	1727
CAM.1079	Sage Building	43-45 Brattle St	Cambridge	1926
CAM.1080		44 Brattle St	Cambridge	1970
CAM.1081		46R Brattle St	Cambridge	1966
CAM.1082		47-49 Brattle St	Cambridge	1926
CAM.1083	Design Research Building	48 Brattle St	Cambridge	1969
CAM.1084	Washington Court	51 Brattle St	Cambridge	1905
CAM.17	Pratt, Dexter House	54 Brattle St	Cambridge	1808
CAM.1229	Warland, John House	69 Brattle St	Cambridge	1838
CAM.1230	Greenleaf, James House	76 Brattle St	Cambridge	1859
CAM.1228	Chamberlin, John House	77 Brattle St	Cambridge	1821
CAM.18	Radcliffe College Alumnae House	79 Brattle St	Cambridge	1836
CAM.19	Wadsworth Chambers	81-83 Brattle St	Cambridge	1908
CAM.20	Burleigh House	85 Brattle St	Cambridge	1847
CAM.21	Stoughton, Mary Fisk House	90 Brattle St	Cambridge	1882
CAM.22		92 Brattle St	Cambridge	1882
CAM.23	Vassall, Henry House	94 Brattle St	Cambridge	1635
CAM.24	Episcopal Divinity School - Washburn Hall	99 Brattle St	Cambridge	1960
CAM.25	Saint John's Chapel	99 Brattle St	Cambridge	1868

Inv. No.	Property Name	Street	Town	Year
CAM.26	Episcopal Divinity School Library - Sherrill Hall	99 Brattle St	Cambridge	1965
CAM.27	Episcopal Divinity School - Wright Hall	99 Brattle St	Cambridge	1911
CAM.28	Episcopal Divinity School - Reed Hall	99 Brattle St	Cambridge	1873
CAM.29	Episcopal Divinity School - Lawrence Hall	99 Brattle St	Cambridge	1873
CAM.30	Episcopal Divinity School - Burnham Hall	99 Brattle St	Cambridge	1879
CAM.31	Hastings, Oliver House	101 Brattle St	Cambridge	1844
CAM.32	Longfellow National Historic Site	105 Brattle St	Cambridge	1759
CAM.33	Dana, Edith Longfellow House	113 Brattle St	Cambridge	1887
CAM.34		114 Brattle St	Cambridge	1903
CAM.35	Thorp, Annie Longfellow House	115 Brattle St	Cambridge	1887
CAM.36	Worcester, Joseph House	121 Brattle St	Cambridge	1843
CAM.37		121A Brattle St	Cambridge	1941
CAM.38		123 Brattle St	Cambridge	
CAM.39		124 Brattle St	Cambridge	1915
CAM.40		125 Brattle St	Cambridge	1939
CAM.41		126 Brattle St	Cambridge	1890
CAM.1235		127 Brattle St	Cambridge	1970
CAM.42		128 Brattle St	Cambridge	1892
CAM.43		130-130R Brattle St	Cambridge	1886
CAM.44		132 Brattle St	Cambridge	1886
CAM.45	Falxa, Dr. Martin House	133 Brattle St	Cambridge	1970
CAM.46		134-136 Brattle St	Cambridge	1857
CAM.47		138 Brattle St	Cambridge	1930
CAM.48		140 Brattle St	Cambridge	1930
CAM.49		142 Brattle St	Cambridge	1915
CAM.50	Cambridge Armenian Church	143 Brattle St	Cambridge	1959
CAM.51		144 Brattle St	Cambridge	1915
CAM.52	Brewster, William House	145 Brattle St	Cambridge	1887
CAM.53		146 Brattle St	Cambridge	1939
CAM.54		147 Brattle St	Cambridge	1887
CAM.55		148 Brattle St	Cambridge	1914
CAM.56	Lechmere, Richard House	149 Brattle St	Cambridge	1762
CAM.57		150 Brattle St	Cambridge	1908
CAM.58		152 Brattle St	Cambridge	1887
CAM.59	Lee, Thomas House	153 Brattle St	Cambridge	1803
CAM.60		154 Brattle St	Cambridge	1865
CAM.1236		155 Brattle St	Cambridge	1889
CAM.61		156 Brattle St	Cambridge	1867

Inv. No.	Property Name	Street	Town	Year
CAM.62		158 Brattle St	Cambridge	1884
CAM.63	Hooper - Lee - Nichols House	159 Brattle St	Cambridge	1685
CAM.64		160 Brattle St	Cambridge	1884
CAM.65		164 Brattle St	Cambridge	1868
CAM.1237	Bartlett, John House	165 Brattle St	Cambridge	1873
CAM.66	Van Brunt, Henry House	167 Brattle St	Cambridge	1883
CAM.67		168 Brattle St	Cambridge	1888
CAM.68	Wells, Judge Daniel House	170 Brattle St	Cambridge	1852
CAM.69		174 Brattle St	Cambridge	1885
CAM.70	Marrett - Ruggles - Fayerweather House	175 Brattle St	Cambridge	1765
CAM.1238	Fayerweather House Squash Court and Garage	177 Brattle St	Cambridge	1915
CAM.71		180 Brattle St	Cambridge	1888
CAM.72	Richards, R. A. House	182 Brattle St	Cambridge	1895
CAM.73		190 Brattle St	Cambridge	1898
CAM.74	Frankfurter, Justice Felix House	192 Brattle St	Cambridge	1907
CAM.75		193 Brattle St	Cambridge	1893
CAM.76		194 Brattle St	Cambridge	1917
CAM.77		195 Brattle St	Cambridge	1896
CAM.78		198 Brattle St	Cambridge	1912
CAM.79	Stubbins, Hugh House	199 Brattle St	Cambridge	1966
CAM.80		200 Brattle St	Cambridge	1901
CAM.81		202 Brattle St	Cambridge	1903
CAM.82		205 Brattle St	Cambridge	1925
CAM.83		209 Brattle St	Cambridge	1925
CAM.84		213-215 Brattle St	Cambridge	1896
CAM.85	Frost, Robert House	29-35 Brewster St	Cambridge	1884
CAM.86	Cambridge Public Library	449 Broadway	Cambridge	1888
CAM.515		301 Brookline Ave	Cambridge	1869
CAM.516		302 Brookline Ave	Cambridge	1887
CAM.517		308 Brookline Ave	Cambridge	1870
CAM.623	Southwick Block	11-19 Brookline St	Cambridge	1911
CAM.88	Brown, Daniel House	7 Brown St	Cambridge	1845
CAM.89	Hill, Aaron House	17 Brown St	Cambridge	1754
CAM.708		1 Bryant St	Cambridge	1911
CAM.709		5 Bryant St	Cambridge	1916
CAM.710		7 Bryant St	Cambridge	1915
CAM.711		20-24 Bryant St	Cambridge	1916
CAM.712		21 Bryant St	Cambridge	1932

Inv. No.	Property Name	Street	Town	Year
CAM.90	Bridgman, Percy House	10 Buckingham Pl	Cambridge	1920
CAM.91	Koch, Carl House	4 Buckingham St	Cambridge	1939
CAM.92	Higginson, Col. Thomas Wentworth House	29 Buckingham St	Cambridge	1880
CAM.942	Memorial Gateway	Cambridge Common	Cambridge	1906
CAM.906	Cambridge Parkway Bridge over Broad Canal	Cambridge Pkwy	Cambridge	1957
CAM.931	Cambridge Parkway	Cambridge Pkwy	Cambridge	1900
CAM.97	Memorial Hall	Cambridge St	Cambridge	1875
CAM.379	Middlesex County Registry of Deeds Building	Cambridge St	Cambridge	1896
CAM.380	Middlesex County Clerk of Courts Building	Cambridge St	Cambridge	1889
CAM.912	Longfellow Bridge - West Boston Bridge	Cambridge St	Cambridge	1907
CAM.914	Lechmere Square Streetcar Station	Cambridge St	Cambridge	1922
CAM.372		82-84 Cambridge St	Cambridge	1937
CAM.373	Davenport, A. H. - Irving and Casson Company	88-134 Cambridge St	Cambridge	1866
CAM.378		160 Cambridge St	Cambridge	1965
CAM.93	East Cambridge Savings Bank	292 Cambridge St	Cambridge	1931
CAM.94	Union Railway Car Barn	613-621 Cambridge St	Cambridge	1869
CAM.535		1353-1369 Cambridge St	Cambridge	1894
CAM.532	Waite Building	1368 Cambridge St	Cambridge	1855
CAM.533	Middlesex Bank Building	1374-1385 Cambridge St	Cambridge	1874
CAM.95		1707-1709 Cambridge St	Cambridge	1845
CAM.96		1715-1717 Cambridge St	Cambridge	1845
CAM.635	Holmes Block II - Green Block	2-14 Central Sq	Cambridge	1798
CAM.636	Home Realty Building	14 Central Sq	Cambridge	1970
CAM.639	Southwick Building I	15-16 Central Sq	Cambridge	1896
CAM.640	Southwick Building II	17-24 Central Sq	Cambridge	1860
CAM.641	White Tower Restaurant	25 Central Sq	Cambridge	1932
CAM.98	Melvin, Isaac House	19 Centre St	Cambridge	1842
CAM.99	Boston and Maine Railroad Signal Tower A	Charles River	Cambridge	1931
CAM.911	Charles River Railroad Draw Bridge #1	Charles River	Cambridge	1931
CAM.920	Charles River Dam	Charles River	Cambridge	1905
CAM.925	Weeks, John Wingate Foot Bridge	Charles River	Cambridge	1927
CAM.928	Lechmere Canal	Charles River	Cambridge	1909
CAM.929	Broad Canal	Charles River	Cambridge	1805
CAM.932	Charles River Basin Granite Seawall and Iron Fence	Charles River	Cambridge	
CAM.935	Metropolitan District Commission Swimming Pool	Charles River	Cambridge	
CAM.1320	Metropolitan District Commission Clorination Plant	Charles River	Cambridge	

Inv. No.	Property Name	Street	Town	Year
CAM.1325	M. I. T. - Pierce, Harold Whitworth Boat House	Charles River	Cambridge	1965
CAM.1326	M. I. T. - Wood, Walter C. Sailing Pavillion	Charles River	Cambridge	1976
CAM.1328	Riverside Boat Club	Charles River	Cambridge	1910
CAM.543	Boardman, James Double House	Cherry St	Cambridge	1843
CAM.100	Fuller, Margaret House	71 Cherry St	Cambridge	1806
CAM.546		87 Cherry St	Cambridge	1845
CAM.545		116-120 Cherry St	Cambridge	1845
CAM.544	Eaton, Jacob House	128 Cherry St	Cambridge	1844
CAM.542		137-139 Cherry St	Cambridge	1840
CAM.537		149-151 Cherry St	Cambridge	1830
CAM.538		159-161 Cherry St	Cambridge	1830
CAM.547		167 Cherry St	Cambridge	1850
CAM.548		169 Cherry St	Cambridge	1850
CAM.101	Kingsley, Chester House	10 Chester St	Cambridge	1866
CAM.518		105 Chestnut St	Cambridge	1875
CAM.519		111 Chestnut St	Cambridge	1875
CAM.102	First Parish Church, Unitarian	1-3 Church St	Cambridge	1833
CAM.103		23-25 Church St	Cambridge	1936
CAM.1085		26-28 Church St	Cambridge	1857
CAM.104		27-29 Church St	Cambridge	1922
CAM.105	Cambridge Police Station	31-33 Church St	Cambridge	1864
CAM.1086	Oxford Grill	32-42 Church St	Cambridge	1931
CAM.1087	Hancock - Torrey House	53 Church St	Cambridge	1827
CAM.1088		54-56 Church St	Cambridge	1925
CAM.1089		59-63 Church St	Cambridge	1949
CAM.1377	Cambridge Almshouse Caretaker's House	36 Churchill Ave	Cambridge	1886
CAM.106	Gale, George House	14-16 Clinton St	Cambridge	1853
CAM.1387		41-43 Columbia St	Cambridge	
CAM.107	Beth Israel Synagogue	238 Columbia St	Cambridge	1901
CAM.908	Commercial Avenue Bridge over Lechmere Canal	Commercial Ave	Cambridge	1907
CAM.1318	Metropolitan District Commission Stables	Commercial Ave	Cambridge	
CAM.336		3 Concord Ave	Cambridge	1915
CAM.337		5 Concord Ave	Cambridge	1917
CAM.108	Howells, William Dean House	37 Concord Ave	Cambridge	1873
CAM.1365	Cambridge Home for the Aged and Infirm	650 Concord Ave	Cambridge	1928
CAM.109	Orne, Sarah House	10 Coolidge Hill Rd	Cambridge	1807
CAM.110	Coolidge, Josiah House	24 Coolidge Hill Rd	Cambridge	1822

Inv. No.	Property Name	Street	Town	Year
CAM.111	Holmes, Joseph House	144 Coolidge Hill St	Cambridge	1801
CAM.600	Coolidge, Flavel House	2 Coolidge Pl	Cambridge	1834
CAM.1369	Blessed Sacrament Roman Catholic Parish School	12 Corporal McTernan St	Cambridge	1924
CAM.112	Valentine Soap Workers' Cottage	5-7 Cottage St	Cambridge	1835
CAM.1212	Mather House - Harvard University	Cowperthwaite St	Cambridge	1967
CAM.113	Birkhoff, George D. House	22 Craigie St	Cambridge	1870
CAM.114	Ross, Denman House	24-26 Craigie St	Cambridge	1869
CAM.115		25 Craigie St	Cambridge	1856
CAM.116	Horsford, Eben House	27 Craigie St	Cambridge	1854
CAM.333	Day, Anna House	139 Cushing St	Cambridge	1856
CAM.117	Colburn, Sara Foster House	7 Dana St	Cambridge	1841
CAM.118	University Museum	11-25 Divinity Ave	Cambridge	1859
CAM.119	Divinity Hall	12 Divinity Ave	Cambridge	1825
CAM.120	Biological Laboratory	16 Divinity Ave	Cambridge	1930
CAM.121	Second Cambridge Savings Bank Building	11-21 Dunster St	Cambridge	1897
CAM.1090	Union Railway Carbarn	25-33 Dunster St	Cambridge	1860
CAM.1091	Second D. U. Club	45 Dunster St	Cambridge	1930
CAM.1092	Metcalf, Eliab Wight House	46 Dunster St	Cambridge	1820
CAM.1093	Edwards, Abraham - Moore, Mary House	53 Dunster St	Cambridge	1841
CAM.1094	Alpha Sigma Phi Club	54 Dunster St	Cambridge	1900
CAM.122	Wyeth, Augustus House	69 Dunster St	Cambridge	1829
CAM.1095		71-77 Dunster St	Cambridge	1894
CAM.123		42 Edward J. Lopez Ave	Cambridge	1830
CAM.1096	Hotel Packard	10-14 Eliot St	Cambridge	1869
CAM.1097		14A Eliot St	Cambridge	1900
CAM.1098		16-18 Eliot St	Cambridge	1898
CAM.124	Sands, Ivory House	145 Elm St	Cambridge	1839
CAM.125	Foster, Dr. House	8 Elmwood Ave	Cambridge	1893
CAM.126	Greenough, J. J. House	9 Elmwood Ave	Cambridge	1903
CAM.127	Smyth, Herbert House	11-15 Elmwood Ave	Cambridge	1903
CAM.128	Kempton, John House	14 Elmwood Ave	Cambridge	1895
CAM.129		20 Elmwood Ave	Cambridge	1892
CAM.130	Benson, Ruth House	26 Elmwood Ave	Cambridge	1899
CAM.131	Watson House	30 Elmwood Ave	Cambridge	1750
CAM.132	Elmwood - Lowell, James Russell House	33 Elmwood Ave	Cambridge	1767
CAM.133	Reardon, Edmund House	195 Erie St	Cambridge	1884
CAM.1371	Blessed Sacrament Roman Catholic Church	203 Erie St	Cambridge	1954

Inv. No.	Property Name	Street	Town	Year
	Convent			
CAM.134	Harvard Graduate Center	10-26 Everett St	Cambridge	1949
CAM.135	Jarvis, The	27 Everett St	Cambridge	1890
CAM.136	Newman, Andrew House	23 Fairmont St	Cambridge	1823
CAM.713		2-4 Farrar St	Cambridge	1927
CAM.714		9 Farrar St	Cambridge	1890
CAM.715		15 Farrar St	Cambridge	1898
CAM.716		16 Farrar St	Cambridge	1931
CAM.717		17 Farrar St	Cambridge	1897
CAM.718		18-20 Farrar St	Cambridge	1923
CAM.719		22 Farrar St	Cambridge	1928
CAM.720		26 Farrar St	Cambridge	1928
CAM.137		10-12 Farwell Pl	Cambridge	1870
CAM.138	Nichols House	11 Farwell Pl	Cambridge	1827
CAM.139		14-16 Farwell Pl	Cambridge	1855
CAM.140	Read, James House	15 Farwell Pl	Cambridge	1772
CAM.141	Child, N. K. House	17 Farwell Pl	Cambridge	1835
CAM.142		18-20 Farwell Pl	Cambridge	1855
CAM.143	Christ Church Parish House	19 Farwell Pl	Cambridge	1948
CAM.144	Toppan House	22-24 Farwell Pl	Cambridge	1900
CAM.145	Deane, Ezra - Williams, George House	21-23 Fayette St	Cambridge	1848
CAM.146		26-28 Fayette St	Cambridge	1857
CAM.430	Cambridge Public Library - O'Connell Branch	Fifth St	Cambridge	1938
CAM.441		69-71 Fifth St	Cambridge	
CAM.452	Hall, Jesse House	75 Fifth St	Cambridge	1837
CAM.428		82 Fifth St	Cambridge	
CAM.429		83 Fifth St	Cambridge	
CAM.907	First Street Bridge over Broad Canal	First St	Cambridge	1924
CAM.147	Athenaeum Press Building	215 First St	Cambridge	1895
CAM.910	Fitchburg Railroad Signal Bridge	Fitchburg Railroad	Cambridge	1930
CAM.148	Abbot, Edwin House	1 Follen St	Cambridge	1889
CAM.1271		5 Follen St	Cambridge	1853
CAM.1273		6 Follen St	Cambridge	1868
CAM.1338		8 Follen St	Cambridge	1871
CAM.149	Second Waterhouse House	9 Follen St	Cambridge	1844
CAM.150		10 Follen St	Cambridge	1875
CAM.1274		13 Follen St	Cambridge	1900
CAM.151	Richards, Theodore W. House	15 Follen St	Cambridge	1900

Inv. No.	Property Name	Street	Town	Year
CAM.1275		19 Follen St	Cambridge	1844
CAM.1276		20 Follen St	Cambridge	1949
CAM.1277		21 Follen St	Cambridge	1841
CAM.1278		22 Follen St	Cambridge	1951
CAM.1279		25 Follen St	Cambridge	1889
CAM.152	Clover Den - Mann, Mary House	29 Follen St	Cambridge	1837
CAM.1280		34 Follen St	Cambridge	1946
CAM.1281		36 Follen St	Cambridge	1847
CAM.1282		44 Follen St	Cambridge	1862
CAM.338	Puritan Arms	46-50 Follen St	Cambridge	1940
CAM.1331	Homer - Lovell House	11 Forest St	Cambridge	1867
CAM.153	Francis, Ebenezer Houuse	1 Francis Ave	Cambridge	1836
CAM.721		6 Francis Ave	Cambridge	1940
CAM.722		7 Francis Ave	Cambridge	1894
CAM.723		8 Francis Ave	Cambridge	1940
CAM.724		9 Francis Ave	Cambridge	1875
CAM.725		10 Francis Ave	Cambridge	1894
CAM.726		11 Francis Ave	Cambridge	1894
CAM.1337		12-14 Francis Ave	Cambridge	1895
CAM.727		16 Francis Ave	Cambridge	1906
CAM.154	Davis, William Morris House	17 Francis Ave	Cambridge	1895
CAM.728		18 Francis Ave	Cambridge	1911
CAM.155	Hyatt, Prof. Alpheus - Durant, Prof. Will B. House	19 Francis Ave	Cambridge	1889
CAM.729		21 Francis Ave	Cambridge	1925
CAM.730		22 Francis Ave	Cambridge	1912
CAM.731		23 Francis Ave	Cambridge	1902
CAM.732		24 Francis Ave	Cambridge	1906
CAM.733		30 Francis Ave	Cambridge	1905
CAM.734		32 Francis Ave	Cambridge	1903
CAM.735	Center for the Study of World Religions	42 Francis Ave	Cambridge	1959
CAM.736		44 Francis Ave	Cambridge	1913
CAM.737		53 Francis Ave	Cambridge	1913
CAM.738		56 Francis Ave	Cambridge	1914
CAM.739		57 Francis Ave	Cambridge	1913
CAM.740		59 Francis Ave	Cambridge	1916
CAM.741		60 Francis Ave	Cambridge	1961
CAM.742		63 Francis Ave	Cambridge	1913
CAM.743	Sert, Jose Luis House	64 Francis Ave	Cambridge	1957

Inv. No.	Property Name	Street	Town	Year
CAM.744		65 Francis Ave	Cambridge	1916
CAM.745		67 Francis Ave	Cambridge	1926
CAM.746		68 Francis Ave	Cambridge	1921
CAM.747		70 Francis Ave	Cambridge	1879
CAM.748		73 Francis Ave	Cambridge	1926
CAM.749		75-77 Francis Ave	Cambridge	1925
CAM.1329	Kennedy, F. A. Steam Bakery	129 Franklin St	Cambridge	1875
CAM.919	Fresh Pond Lane over B & M Railroad	Fresh Pond Ln	Cambridge	1926
CAM.9014	Fresh Pond Parkway	Fresh Pond Pkwy	Cambridge	1899
CAM.9015	Fresh Pond Parkway - Concord Avenue Rotary Islands	Fresh Pond Pkwy	Cambridge	1928
CAM.9016	Fresh Pond Parkway - New Street Rotary	Fresh Pond Pkwy	Cambridge	1928
CAM.9017	Fresh Pond Parkway Tree Canopy	Fresh Pond Pkwy	Cambridge	1920
CAM.9018	Fresh Pond Parkway Median System	Fresh Pond Pkwy	Cambridge	1958
CAM.156	Wyeth - Eliot, Charles House	17 Fresh Pond Pkwy	Cambridge	1838
CAM.157	Frost, Walter House	10 Frost St	Cambridge	1807
CAM.158	Christ Church	0 Garden St	Cambridge	1760
CAM.159	Saunders, William House	1 Garden St	Cambridge	1821
CAM.339		2 Garden St	Cambridge	1835
CAM.340	Howe, Sarah House	3 Garden St	Cambridge	1851
CAM.160	First Church in Cambridge Congregational	11 Garden St	Cambridge	1870
CAM.341		17-19 Garden St	Cambridge	1926
CAM.161	Sears Tower - Harvard Observatory	60 Garden St	Cambridge	1843
CAM.162	Warner House	63 Garden St	Cambridge	1855
CAM.163	Gray, Asa House	88 Garden St	Cambridge	1810
CAM.1240		91 Garden St	Cambridge	1922
CAM.164	Taylor Square Firehouse	113 Garden St	Cambridge	1904
CAM.165	Warren, H. Langford House	6 Garden Terr	Cambridge	1904
CAM.671	Rollins, John House	16 Garfield St	Cambridge	1891
CAM.672	Wood, Edward House	18 Garfield St	Cambridge	1886
CAM.1336	Shepherd, Herbert House	31-33 Garfield St	Cambridge	1886
CAM.673	Farquhar, Robert House	34 Garfield St	Cambridge	1890
CAM.674	Coon, Sarah House	36 Garfield St	Cambridge	1887
CAM.666	Shepherd, Edward House	39 Garfield St	Cambridge	1885
CAM.675	Thayer, Bertha House	44 Garfield St	Cambridge	1888
CAM.667	Estabrook, J. W. House	45 Garfield St	Cambridge	1886
CAM.668	Bartlett, A. S. House	49 Garfield St	Cambridge	1888
CAM.676	Green, Roscoe House	54 Garfield St	Cambridge	1890

Inv. No.	Property Name	Street	Town	Year
CAM.669	Dewey House	55 Garfield St	Cambridge	1889
CAM.677	Worcester, George House	58 Garfield St	Cambridge	1890
CAM.678	Allen, Frank House	64 Garfield St	Cambridge	1891
CAM.670	Sullivan, Cornelius House	67 Garfield St	Cambridge	1889
CAM.679	Farnsworth, Charles House	74 Garfield St	Cambridge	1897
CAM.680	Ball, Elijah House	80 Garfield St	Cambridge	1887
CAM.502	Lechmere Point Corporation Row House	47 Gore St	Cambridge	1821
CAM.503	Lechmere Point Corporation Row House	49 Gore St	Cambridge	1821
CAM.504	Lechmere Point Corporation Row House	51 Gore St	Cambridge	1821
CAM.1241		1 Gray Gardens East	Cambridge	1925
CAM.1242		2 Gray Gardens East	Cambridge	1930
CAM.1243		3 Gray Gardens East	Cambridge	1923
CAM.1244		8 Gray Gardens East	Cambridge	1923
CAM.1245		9 Gray Gardens East	Cambridge	1922
CAM.1246		11 Gray Gardens East	Cambridge	1924
CAM.1247		12 Gray Gardens East	Cambridge	1922
CAM.1248		13 Gray Gardens East	Cambridge	1925
CAM.1249		16 Gray Gardens East	Cambridge	1922
CAM.1250		17 Gray Gardens East	Cambridge	1958
CAM.1251		19 Gray Gardens East	Cambridge	1927
CAM.1252		22 Gray Gardens East	Cambridge	1962
CAM.1253		25 Gray Gardens East	Cambridge	1926
CAM.1254		26 Gray Gardens East	Cambridge	1922
CAM.1255		27 Gray Gardens East	Cambridge	1923
CAM.1256		30 Gray Gardens East	Cambridge	1928
CAM.1257		31 Gray Gardens East	Cambridge	1924
CAM.1258		37 Gray Gardens East	Cambridge	1923
CAM.1259		3 Gray Gardens West	Cambridge	1923
CAM.1260		4 Gray Gardens West	Cambridge	1922
CAM.1261		11 Gray Gardens West	Cambridge	1923
CAM.1262		14 Gray Gardens West	Cambridge	1924
CAM.1263		15 Gray Gardens West	Cambridge	1929
CAM.1264		16 Gray Gardens West	Cambridge	1925
CAM.167	Hall Tavern	20 Gray Gardens West	Cambridge	1800
CAM.1265		24 Gray Gardens West	Cambridge	1928
CAM.166	Frost, David House	26 Gray St	Cambridge	1815
CAM.618		133 Green St	Cambridge	1894
CAM.624	Raymond, T. H. Warehouse	175 Green St	Cambridge	1908

Inv. No.	Property Name	Street	Town	Year
CAM.1389		205-207 Green St	Cambridge	
CAM.534	Inman Square Fire Station	Hampshire St	Cambridge	1912
CAM.168	Lamson, Rufus House	72-74 Hampshire St	Cambridge	1854
CAM.1367	Massachusetts Avenue Baptist Church	146 Hampshire St	Cambridge	1902
CAM.169	Opposition House	2-4 Hancock Pl	Cambridge	1807
CAM.170		104-106 Hancock St	Cambridge	1839
CAM.171	Atwood, Ephraim House	110 Hancock St	Cambridge	1839
CAM.536	Fay, Samuel P. P. House	172 Harvard St	Cambridge	1805
CAM.549	Allen Block	177-183 Harvard St	Cambridge	1875
CAM.1354	Courtney, Benjamin House	273 Harvard St	Cambridge	1867
CAM.172	Jones, William R. House	307 Harvard St	Cambridge	1865
CAM.173	Vinal, Albert House	325 Harvard St	Cambridge	1853
CAM.681	Melledge, James P. House	335 Harvard St	Cambridge	1850
CAM.684	Warner, Caleb House	336 Harvard St	Cambridge	1858
CAM.682		337 Harvard St	Cambridge	1887
CAM.685	Frothingham, Amos House	338 Harvard St	Cambridge	1859
CAM.686	Goepper, William House	340 Harvard St	Cambridge	1897
CAM.683		341-343 Harvard St	Cambridge	1855
CAM.687	Rindge, Samuel Baker House	342-344 Harvard St	Cambridge	1857
CAM.174	Bradbury, William F. House	369 Harvard St	Cambridge	1877
CAM.175	Hapgood, Richard House	382-392 Harvard St	Cambridge	1889
CAM.176	Ware Hall	383 Harvard St	Cambridge	1893
CAM.1099	Delta Upsilon Club	396 Harvard St	Cambridge	1914
CAM.177	Old Cambridge Baptist Church	398 Harvard St	Cambridge	1867
CAM.193	Austin Hall	Harvard University	Cambridge	1881
CAM.178	Holden Chapel - Harvard University	Harvard Yard	Cambridge	1764
CAM.179	Sever Hall	Harvard Yard	Cambridge	1880
CAM.180	University Hall	Harvard Yard	Cambridge	1812
CAM.181	Harvard Hall - Harvard University	Harvard Yard	Cambridge	1764
CAM.182	Hollis Hall - Harvard University	Harvard Yard	Cambridge	1762
CAM.183	Massachusetts Hall	Harvard Yard	Cambridge	1718
CAM.184	Weld Hall - Harvard University	Harvard Yard	Cambridge	1870
CAM.185	Boylston Hall - Harvard University	Harvard Yard	Cambridge	1857
CAM.186	Holworthy Hall - Harvard University	Harvard Yard	Cambridge	1811
CAM.187	Grays Hall - Harvard University	Harvard Yard	Cambridge	1862
CAM.188	Lehman Hall - Harvard University	Harvard Yard	Cambridge	1924
CAM.189	Matthews House - Harvard University	Harvard Yard	Cambridge	1871
CAM.190	Straus Hall - Harvard University	Harvard Yard	Cambridge	1926

Inv. No.	Property Name	Street	Town	Year
CAM.191	Thayer Hall - Harvard University	Harvard Yard	Cambridge	1869
CAM.192	Wigglesworth Hall - Harvard University	Harvard Yard	Cambridge	1930
CAM.953	Harvard University - 1857 Gate	Harvard Yard	Cambridge	1901
CAM.954	Harvard University - 1870 Gate	Harvard Yard	Cambridge	1901
CAM.956	Harvard University - 1874 Gate	Harvard Yard	Cambridge	1901
CAM.957	Harvard University - 1875 Gate	Harvard Yard	Cambridge	1901
CAM.958	Harvard University - 1881 Gate	Harvard Yard	Cambridge	1906
CAM.959	Harvard University - 1885 Gate	Harvard Yard	Cambridge	1904
CAM.960	Harvard University - 1886 Gate	Harvard Yard	Cambridge	1901
CAM.961	Harvard University - 1887 Gate	Harvard Yard	Cambridge	1906
CAM.962	Harvard University - 1888 Gate	Harvard Yard	Cambridge	1906
CAM.963	Harvard University - 1889 Gate	Harvard Yard	Cambridge	1901
CAM.964	Harvard University - 1890 Gate	Harvard Yard	Cambridge	1901
CAM.965	Harvard University - 1880 Gate	Harvard Yard	Cambridge	1902
CAM.968	Harvard University - Delivery Gate	Harvard Yard	Cambridge	1948
CAM.969	Harvard University - Driveway Gate	Harvard Yard	Cambridge	1948
CAM.970	Harvard University - 1908 Gate	Harvard Yard	Cambridge	1936
CAM.971	Harvard University - Emerson Gate	Harvard Yard	Cambridge	1936
CAM.972	Harvard University - Fire Station Gate	Harvard Yard	Cambridge	1970
CAM.974	Harvard University - 1876 Gate	Harvard Yard	Cambridge	1901
CAM.976	Harvard University - Johnston Gate	Harvard Yard	Cambridge	1889
CAM.977	Harvard University - Lamont Gate	Harvard Yard	Cambridge	1948
CAM.978	Harvard University - Gatehouse	Harvard Yard	Cambridge	1983
CAM.979	Harvard University - 1879 Gate	Harvard Yard	Cambridge	1891
CAM.981	Harvard University - Porcellian Gate	Harvard Yard	Cambridge	1901
CAM.983	Harvard University - Robinson Gate	Harvard Yard	Cambridge	1936
CAM.985	Harvard University - 1877 Gate	Harvard Yard	Cambridge	1901
CAM.1214	Harvard University - Canaday Hall	Harvard Yard	Cambridge	1973
CAM.1215	Harvard University - Emerson Hall	Harvard Yard	Cambridge	1904
CAM.1216	Harvard University - Houghton Library	Harvard Yard	Cambridge	1941
CAM.1217	Harvard University - Lamont Library	Harvard Yard	Cambridge	1947
CAM.1218	Harvard University - Lionel Hall	Harvard Yard	Cambridge	1924
CAM.1219	Harvard University - Memorial Church	Harvard Yard	Cambridge	1931
CAM.1220	Harvard University - Mower Hall	Harvard Yard	Cambridge	1924
CAM.1221	Brooks, Phillips House - Harvard Univsersity	Harvard Yard	Cambridge	1898
CAM.1222	Harvard University - Pusey Library	Harvard Yard	Cambridge	1973
CAM.1223	Harvard University - Robinson Hall	Harvard Yard	Cambridge	1900
CAM.1224	Harvard University - Stoughton Hall	Harvard Yard	Cambridge	1804

Inv. No.	Property Name	Street	Town	Year
CAM.1227	Harvard University - Widener Library	Harvard Yard	Cambridge	1913
CAM.520		6 Hastings Sq	Cambridge	1884
CAM.1231	Bates, Jacob H. House	11 Hawthorn St	Cambridge	1813
CAM.194	Daly, Reginald A. House	23 Hawthorn St	Cambridge	1885
CAM.195	Wadsworth House	31 Hawthorn St	Cambridge	1935
CAM.196		35 Hawthorn St	Cambridge	1935
CAM.197	Glaser, Dorothy Merriless House	37 Hawthorn St	Cambridge	1937
CAM.198		41 Hawthorn St	Cambridge	1911
CAM.199	Maynardier, G. B. House	43 Hawthorn St	Cambridge	1900
CAM.1232		49 Hawthorn St	Cambridge	1900
CAM.521		75 Henry St	Cambridge	1892
CAM.1343		82-84 Henry St	Cambridge	
CAM.200	Noyes, J. A. House	1 Highland St	Cambridge	1894
CAM.796	Usher, Samuel House	11 Hillside Ave	Cambridge	1887
CAM.750		11 Holden St	Cambridge	1928
CAM.751		41 Holden St	Cambridge	1840
CAM.752		45 Holden St	Cambridge	1928
CAM.1383	Chadwick, Samuel E. House	10 Hollis St	Cambridge	1853
CAM.1100	Fly Club	2 Holyoke Pl	Cambridge	1899
CAM.1101		9 Holyoke Pl	Cambridge	1930
CAM.1197	Lowell House - Harvard University	10 Holyoke Pl	Cambridge	1929
CAM.1198	Indoor Athletic Building - Harvard University	35-41 Holyoke Pl	Cambridge	1929
CAM.1102		8-10 Holyoke St	Cambridge	1927
CAM.201	Hasty Pudding Club	12 Holyoke St	Cambridge	1887
CAM.1103	Apley Court	16 Holyoke St	Cambridge	1897
CAM.1104	Sawyer, Samuel F. House	20 Holyoke St	Cambridge	1818
CAM.1105		22 Holyoke St	Cambridge	1956
CAM.1106		24 Holyoke St	Cambridge	1963
CAM.1107	Owl Club	30 Holyoke St	Cambridge	1905
CAM.1302		2 Hubbard Pk	Cambridge	1909
CAM.1293		3 Hubbard Pk	Cambridge	1887
CAM.1306	Warren, John L. House	5 Hubbard Pk	Cambridge	1922
CAM.1305	Paine, George House	6 Hubbard Pk	Cambridge	1918
CAM.1295		8 Hubbard Pk	Cambridge	1888
CAM.1301	Nutting, Lillian House	12 Hubbard Pk	Cambridge	1908
CAM.1297		14 Hubbard Pk	Cambridge	1892
CAM.1304		15 Hubbard Pk	Cambridge	1914
CAM.1303	Beach, Revel W. House	19 Hubbard Pk	Cambridge	1913

Inv. No.	Property Name	Street	Town	Year
CAM.1298		20 Hubbard Pk	Cambridge	1892
CAM.1299		26 Hubbard Pk	Cambridge	1894
CAM.1296		32 Hubbard Pk	Cambridge	1890
CAM.1346		15 Humboldt St	Cambridge	
CAM.904	Huron Avenue Bridge over B & M Railroad	Huron Ave	Cambridge	1892
CAM.202	Syrian Orthodox Catholic Church of Saint Mary	8 Inman St	Cambridge	1822
CAM.576	Matthews Apartments	12 Inman St	Cambridge	1966
CAM.1364	Bennett, James House	17 Inman St	Cambridge	1871
CAM.1349	Luke Rowhouse	19 Inman St	Cambridge	1877
CAM.1350	Luke Rowhouse	21 Inman St	Cambridge	1877
CAM.1351	Luke Rowhouse	21 1/2 Inman St	Cambridge	1877
CAM.203		102-104 Inman St	Cambridge	1845
CAM.204		106-108 Inman St	Cambridge	1845
CAM.205		110-112 Inman St	Cambridge	1845
CAM.753		80-82 Irving St	Cambridge	1927
CAM.754		81 Irving St	Cambridge	1916
CAM.755		84-86 Irving St	Cambridge	1927
CAM.756		89 Irving St	Cambridge	1916
CAM.206	James, William House	95 Irving St	Cambridge	1889
CAM.757		99 Irving St	Cambridge	1889
CAM.758		103-103A Irving St	Cambridge	1889
CAM.207	cummings, e. e. House	104 Irving St	Cambridge	1893
CAM.759	Van Dael - DeSola Pool House	105 Irving St	Cambridge	1890
CAM.760		107 Irving St	Cambridge	1891
CAM.761		109 Irving St	Cambridge	1893
CAM.762	Davis, Robert House	110 Irving St	Cambridge	1889
CAM.763		114 Irving St	Cambridge	1911
CAM.764		133 Irving St	Cambridge	1963
CAM.765	American Academy of Arts and Sciences	136 Irving St	Cambridge	1980
CAM.766		138 Irving St	Cambridge	1912
CAM.297	Radcliffe College - Schlesinger Library	James St	Cambridge	1907
CAM.950	Winthrop Square Park	Kennedy St	Cambridge	1631
CAM.1108	Abbott Building	5 Kennedy St	Cambridge	1908
CAM.1109		9-25 Kennedy St	Cambridge	1887
CAM.1110	Farwell, Levi Tenant House	10-14 Kennedy St	Cambridge	1820
CAM.1111	Read Block	18-28 Kennedy St	Cambridge	1885
CAM.1112		29-41 Kennedy St	Cambridge	1971
CAM.1113		30 Kennedy St	Cambridge	1936

Inv. No.	Property Name	Street	Town	Year
CAM.1114	Garage, The	34-42 Kennedy St	Cambridge	1924
CAM.1115	Fox Club	44 Kennedy St	Cambridge	1906
CAM.1116	Drayton Hall	48 Kennedy St	Cambridge	1901
CAM.1117		50 Kennedy St	Cambridge	1892
CAM.1118		52-54 Kennedy St	Cambridge	1884
CAM.1119	Galeria	55-57 Kennedy St	Cambridge	1974
CAM.1120		56 Kennedy St	Cambridge	1903
CAM.1121	S. A. E. Club	60 Kennedy St	Cambridge	1929
CAM.1122		63-65 Kennedy St	Cambridge	1984
CAM.1200	Hicks, John House - Harvard University	64 Kennedy St	Cambridge	1762
CAM.1199	Smith Hall - Harvard University	70-78 Kennedy St	Cambridge	1913
CAM.208	Loring, Judge Edward - Peirce, Benjamin House	4 Kirkland Pl	Cambridge	1856
CAM.688	Merrill, John House	9 Kirkland Pl	Cambridge	1855
CAM.689	Shaw, Southworth House	10 Kirkland Pl	Cambridge	1856
CAM.690	Green, Louise House	11 Kirkland Pl	Cambridge	1921
CAM.691	Cutler, Isaac House	12 Kirkland Pl	Cambridge	1857
CAM.692	Cutler, George House	13 Kirkland Pl	Cambridge	1857
CAM.693	Ware House	14 Kirkland Pl	Cambridge	1839
CAM.209	Treadwell - Sparks House	21 Kirkland St	Cambridge	1838
CAM.210	Brooks, Luther House	34 Kirkland St	Cambridge	1840
CAM.211	Lovering, Joseph House	38 Kirkland St	Cambridge	1839
CAM.767		49 Kirkland St	Cambridge	1886
CAM.768		55 Kirkland St	Cambridge	1927
CAM.769		57-59 Kirkland St	Cambridge	1927
CAM.212	Eliot, Charles W. House	61 Kirkland St	Cambridge	1858
CAM.213	Child, Francis J. House	67 Kirkland St	Cambridge	1861
CAM.9019	Brown-Rhone, Jill Park	Lafayette Sq	Cambridge	2007
CAM.214	Fresh Pond Hotel	234 Lakeview Ave	Cambridge	1796
CAM.1013		13 Lancaster St	Cambridge	1880
CAM.1005		16 Lancaster St	Cambridge	1892
CAM.1006		18 Lancaster St	Cambridge	1885
CAM.1007		24 Lancaster St	Cambridge	1883
CAM.1014	Sawyer, Chester House	27 Lancaster St	Cambridge	1886
CAM.1015	Hovey, William B. House	29 Lancaster St	Cambridge	1887
CAM.1008		36 Lancaster St	Cambridge	1886
CAM.215	Yerxa House and Carriage House	37 Lancaster St	Cambridge	1887
CAM.216	Larches, The	22 Larch Rd	Cambridge	1808
CAM.1317	Metropolitan District Commission Boat House	Lechmere Canal	Cambridge	1910

Inv. No.	Property Name	Street	Town	Year
CAM.217		15-17 Lee St	Cambridge	1856
CAM.218	Lowell, The	33 Lexington Ave	Cambridge	1900
CAM.1123		5-7 Linden St	Cambridge	1867
CAM.1124	Harvard Square Squash Court	8-10 Linden St	Cambridge	1908
CAM.1125	Delphic Club	9 Linden St	Cambridge	1902
CAM.219	Apthorp, Rev. East House	10 Linden St	Cambridge	1760
CAM.220	Cooper - Frost - Austin House	21 Linnaean St	Cambridge	1681
CAM.221	Peabody Court Apartments	41-43 Linnaean St	Cambridge	1922
CAM.1234	Cambridge Friends Meetinghouse and Center	5 Longfellow Pk	Cambridge	1914
CAM.1233		6 Longfellow Pk	Cambridge	1901
CAM.222	Lowell School	25 Lowell St	Cambridge	1883
CAM.1319	Magazine Beach Bath House	Magazine Beach	Cambridge	1899
CAM.223	First Baptist Church, Cambridge	5 Magazine St	Cambridge	1881
CAM.637	Church Corners Apartments	8-12 Magazine St	Cambridge	1985
CAM.510	Pilgrim Congregational Church	35 Magazine St	Cambridge	1871
CAM.511	Hinman, Joseph House	48 Magazine St	Cambridge	1875
CAM.512	Brewer, Isaac D. - Pulsifer, William Double House	50-52 Magazine St	Cambridge	1852
CAM.513	Grace Methodist Church	56 Magazine St	Cambridge	1886
CAM.224	Flentje, Ernst House	129 Magazine St	Cambridge	1866
CAM.87	Kendall Square Subway Station	Main St	Cambridge	1912
CAM.225	Kendall Square Substation	Main St	Cambridge	1911
CAM.1308	Davenport - Allen and Endicott Factory Headhouse	Main St	Cambridge	1882
CAM.1309	Davenport - Allen and Endicott Factory East Wing	Main St	Cambridge	1848
CAM.1335	Luke Building	135-145 Main St	Cambridge	1874
CAM.1384	Engine House No. 7	350 Main St	Cambridge	1895
CAM.328	Union #2 Engine House	787-789 Main St	Cambridge	1852
CAM.609	Bright Building	853 Main St	Cambridge	1898
CAM.608	Wentworth Building	859-863 Main St	Cambridge	1897
CAM.610	Union Baptist Church	872 Main St	Cambridge	1882
CAM.607	Mellen Building	875 Main St	Cambridge	1897
CAM.606	Andelman, Ezra Building	877-881 Main St	Cambridge	1941
CAM.611	Sawyer, Charles Tenement	882-884 Main St	Cambridge	1873
CAM.605	Whitney, Lucretia and Henry Building	893-907 Main St	Cambridge	1870
CAM.703		6 Maple Ave	Cambridge	
CAM.694	Stevens, Charles B. House	8 Maple Ave	Cambridge	1873
CAM.704		12 Maple Ave	Cambridge	

Inv. No.	Property Name	Street	Town	Year
CAM.705		14-16 Maple Ave	Cambridge	
CAM.702		15 Maple Ave	Cambridge	
CAM.701		19 Maple Ave	Cambridge	
CAM.697	Webster, Francis B. House	20 Maple Ave	Cambridge	1861
CAM.695	Hall, Lewis House	23 Maple Ave	Cambridge	1867
CAM.706		24 Maple Ave	Cambridge	
CAM.700		25 Maple Ave	Cambridge	1920
CAM.707		26 Maple Ave	Cambridge	
CAM.699		27 Maple Ave	Cambridge	
CAM.698		29 Maple Ave	Cambridge	
CAM.696	Munroe, Philip House	31 Maple Ave	Cambridge	1887
CAM.226	Mason, Josiah Jr. House	11 Market St	Cambridge	1831
CAM.295	Radcliffe College Gymnasium	Mason St	Cambridge	1898
CAM.296	Radcliffe College - Agassiz House	Mason St	Cambridge	1904
CAM.227	Norton House Ell	4 Mason St	Cambridge	1847
CAM.228		6-12 Mason St	Cambridge	
CAM.260	M. I. T. Alumni Swimming Pool Building	Massachusetts Ave	Cambridge	1940
CAM.261	Kresge Auditorium	Massachusetts Ave	Cambridge	1953
CAM.262	M. I. T. Chapel	Massachusetts Ave	Cambridge	1954
CAM.901	Harvard Square Subway Kiosk	Massachusetts Ave	Cambridge	1928
CAM.905	Massachusetts Avenue Bridge over Conrail	Massachusetts Ave	Cambridge	1900
CAM.916	Central Square Subway Station	Massachusetts Ave	Cambridge	1912
CAM.921	Harvard Bridge	Massachusetts Ave	Cambridge	1890
CAM.938	Cambridge Common	Massachusetts Ave	Cambridge	1631
CAM.939	Cambridge Common South Traffic Island	Massachusetts Ave	Cambridge	1976
CAM.945	Burying Ground Fence	Massachusetts Ave	Cambridge	1891
CAM.946	Flagstaff Park	Massachusetts Ave	Cambridge	1913
CAM.947	North Little Common	Massachusetts Ave	Cambridge	1858
CAM.949	Central Square Street Pattern	Massachusetts Ave	Cambridge	1630
CAM.334	Cambridge Armory	120 Massachusetts Ave	Cambridge	1902
CAM.332	Metropolitan Storage Warehouse	134 Massachusetts Ave	Cambridge	1895
CAM.1366	New England Confectionery Company Factory	250 Massachusetts Ave	Cambridge	1927
CAM.612	Lamson, The	351-355 Massachusetts Ave	Cambridge	1907
CAM.614	Lafayette Square Fire Station	378 Massachusetts Ave	Cambridge	1893
CAM.613	Shell Gas Station	385 Massachusetts Ave	Cambridge	1948
CAM.615	Salvation Army - Cambridge Citadel	400-402 Massachusetts Ave	Cambridge	1968
CAM.604		401-409 Massachusetts Ave	Cambridge	1966
CAM.603	Taylor, William A. House and Shop	411-413 Massachusetts Ave	Cambridge	1887

Inv. No.	Property Name	Street	Town	Year
CAM.602	Barkin and Gorfinkle Building	415-429 Massachusetts Ave	Cambridge	1925
CAM.616	Kennedy, Frank A. Store	424 Massachusetts Ave	Cambridge	1896
CAM.617	Kutz, Issac Store	428 Massachusetts Ave	Cambridge	1910
CAM.229	Kennedy, The	430-442 Massachusetts Ave	Cambridge	1890
CAM.601	Robbins Building	433-447 Massachusetts Ave	Cambridge	1923
CAM.619	Blanchard Building	448-450 Massachusetts Ave	Cambridge	1886
CAM.324	South Row	452-458 Massachusetts Ave	Cambridge	1807
CAM.1393	Dana Row - South Row	452-458 Massachusetts Ave	Cambridge	2003
CAM.599	Rogers, F. W. and G. M. Building	453-457 Massachusetts Ave	Cambridge	1885
CAM.620	Freedman Building	460-464 Massachusetts Ave	Cambridge	1933
CAM.598	McDonald's Restaurant	463-467 Massachusetts Ave	Cambridge	1974
CAM.621	Central Square Realty Trust Building	468-480 Massachusetts Ave	Cambridge	1929
CAM.597	Moller's Furniture Store	485 Massachusetts Ave	Cambridge	1926
CAM.622	Longfellow, The	492-498 Massachusetts Ave	Cambridge	1893
CAM.596	Kane's Furniture Store	493-507 Massachusetts Ave	Cambridge	1916
CAM.625	Burger King Restaraunt	506 Massachusetts Ave	Cambridge	1970
CAM.1394	Hovey, Phineas Building	512-514 Massachusetts Ave	Cambridge	1842
CAM.595	Central Trust Building	515-527 Massachusetts Ave	Cambridge	1927
CAM.627	Miller Store	520 Massachusetts Ave	Cambridge	1924
CAM.628	Rosenwald Realty Corporation Building	522-526 Massachusetts Ave	Cambridge	1928
CAM.230	Odd Fellows Hall	536 Massachusetts Ave	Cambridge	1884
CAM.629	Clark - Lamb Building	546-550 Massachusetts Ave	Cambridge	1873
CAM.630	Albani Building	552-566 Massachusetts Ave	Cambridge	1925
CAM.592	Bullock, Charles Building	567-569 Massachusetts Ave	Cambridge	1859
CAM.591	Central Square Theater	571-577 Massachusetts Ave	Cambridge	1917
CAM.631	Ginsberg Building - Harvard Bazar	572-590 Massachusetts Ave	Cambridge	1913
CAM.590	Morse, Asa P. Building	579-587 Massachusetts Ave	Cambridge	1893
CAM.589	Cambridgeport National Bank Building	593-597 Massachusetts Ave	Cambridge	1869
CAM.632	Manhattan Market - Purity Supreme Super Market	596-610 Massachusetts Ave	Cambridge	1899
CAM.588	Morse, Asa Second Building	599-601 Massachusetts Ave	Cambridge	1905
CAM.587	Fisk and Coleman Building	603-605 Massachusetts Ave	Cambridge	1892
CAM.633	Prospect House	614-620 Massachusetts Ave	Cambridge	1869
CAM.586	Corcoran, John H. Building	615-627 Massachusetts Ave	Cambridge	1927
CAM.634	Holmes Block I	624-638 Massachusetts Ave	Cambridge	1915
CAM.1395	New Holmes Block	624-638 Massachusetts Ave	Cambridge	1998
CAM.585	Woolworth, F. W. Building	633-641 Massachusetts Ave	Cambridge	1950
CAM.584	Watriss Building	643-649 Massachusetts Ave	Cambridge	1880

Inv. No.	Property Name	Street	Town	Year
CAM.583	Dowse, Thomas House	653-655 Massachusetts Ave	Cambridge	1814
CAM.581	New England Gas and Electric Association II Bldg	671-675 Massachusetts Ave	Cambridge	1966
CAM.642	Central Square Building	674 Massachusetts Ave	Cambridge	1926
CAM.643	Chamberlain - Hyde Building	684-688 Massachusetts Ave	Cambridge	1869
CAM.580	Cambridgeport Savings Bank	689 Massachusetts Ave	Cambridge	1904
CAM.644	Dana Building	692-698 Massachusetts Ave	Cambridge	1872
CAM.645	Southwick Building	700-706 Massachusetts Ave	Cambridge	1908
CAM.646	Norris Building	710-720 Massachusetts Ave	Cambridge	1916
CAM.579	Cambridge Electric Light Building	719 Massachusetts Ave	Cambridge	1912
CAM.647	Thayer Building I	722-724 Massachusetts Ave	Cambridge	1863
CAM.648	Thayer Building II	728-730 Massachusetts Ave	Cambridge	1868
CAM.578	Southwick Building	731-751 Massachusetts Ave	Cambridge	1896
CAM.649	Dobbins and Draper Store	736-750 Massachusetts Ave	Cambridge	1922
CAM.650	Dobbins and Draper Store	736-750 Massachusetts Ave	Cambridge	1922
CAM.231	Cambridge Mutual Fire Insurance Company Building	763 Massachusetts Ave	Cambridge	1888
CAM.232	Central Square Post Office	770 Massachusetts Ave	Cambridge	1933
CAM.233	Cambridge City Hall	795 Massachusetts Ave	Cambridge	1889
CAM.651	Cambridge Senior Center	800-806 Massachusetts Ave	Cambridge	1925
CAM.652	Young Men's Christian Association Building	820-830 Massachusetts Ave	Cambridge	1896
CAM.1396	Brusch Medical Center	825-831 Massachusetts Ave	Cambridge	1951
CAM.653	Saint Peter's Episcopal Church	834 Massachusetts Ave	Cambridge	1867
CAM.654	Modern Manor Apartments	842-864 Massachusetts Ave	Cambridge	1925
CAM.900	Houghton Beech Tree	1000 Massachusetts Ave	Cambridge	
CAM.1127	Brentford Hall	1137 Massachusetts Ave	Cambridge	1899
CAM.1128	Dunham, Israel Houses	1156-1166 Massachusetts Ave	Cambridge	1858
CAM.1129		1168 Massachusetts Ave	Cambridge	1892
CAM.1130		1170-1174 Massachusetts Ave	Cambridge	1849
CAM.1131	Longfellow Court	1200 Massachusetts Ave	Cambridge	1916
CAM.1132	Gulf Gas Station	1201 Massachusetts Ave	Cambridge	1940
CAM.1133		1206 Massachusetts Ave	Cambridge	1965
CAM.1134		1208-1210 Massachusetts Ave	Cambridge	1842
CAM.1135	Quincy Hall	1218 Massachusetts Ave	Cambridge	1891
CAM.1136		1230 Massachusetts Ave	Cambridge	1907
CAM.1137		1234-1238 Massachusetts Ave	Cambridge	1894
CAM.1138	Hamden Hall	1246-1260 Massachusetts Ave	Cambridge	1902
CAM.1139	A. D. Club	1268-1270 Massachusetts Ave	Cambridge	1899

Inv. No.	Property Name	Street	Town	Year
CAM.1140	Niles Building	1280 Massachusetts Ave	Cambridge	1984
CAM.234	Fairfax, The	1300-1306 Massachusetts Ave	Cambridge	1869
CAM.1141	Fairfax - Hilton Block	1310-1312 Massachusetts Ave	Cambridge	1883
CAM.1142	Fairfax - Hilton Block	1316 Massachusetts Ave	Cambridge	1885
CAM.235	Porcellian Club	1320-1324 Massachusetts Ave	Cambridge	1890
CAM.1143	Manter Hall	1325 Massachusetts Ave	Cambridge	1885
CAM.236	Wadsworth House	1341 Massachusetts Ave	Cambridge	1726
CAM.237	Holyoke Center	1350 Massachusetts Ave	Cambridge	1961
CAM.1144	Cambridge Savings Bank	1372-1376 Massachusetts Ave	Cambridge	1923
CAM.1145	Read, Joseph Stacey House	1380-1382 Massachusetts Ave	Cambridge	1783
CAM.1146	Bartlett, Joseph House	1384-1392 Massachusetts Ave	Cambridge	1800
CAM.1147	Harvard Coop Society	1400 Massachusetts Ave	Cambridge	1924
CAM.1148	Harvard Coop Society	1408-1410 Massachusetts Ave	Cambridge	1956
CAM.1149	Harvard Trust Company	1414 Massachusetts Ave	Cambridge	1923
CAM.1150	College House	1420-1442 Massachusetts Ave	Cambridge	1832
CAM.342	Gannet House	1511 Massachusetts Ave	Cambridge	1838
CAM.343	Hemenway Gymnasium	1517 Massachusetts Ave	Cambridge	1938
CAM.344	Hastings Hall	1519 Massachusetts Ave	Cambridge	1888
CAM.345	Harvard Epworth Methodist Church	1555 Massachusetts Ave	Cambridge	1891
CAM.1334	Francis - Allyn House	1564 Massachusetts Ave	Cambridge	1831
CAM.1333	Sawin - Cobb - Wilson House	1626 Massachusetts Ave	Cambridge	1868
CAM.238	Saunders, Charles Hicks House	1627 Massachusetts Ave	Cambridge	1862
CAM.239	Montrose, The	1648 Massachusetts Ave	Cambridge	1898
CAM.240	Dunvegan, The	1654 Massachusetts Ave	Cambridge	1898
CAM.241	Worcester, Frederick House	1734 Massachusetts Ave	Cambridge	1886
CAM.242	North Avenue Congregational Church	1803 Massachusetts Ave	Cambridge	1845
CAM.243	Lovell Block	1853 Massachusetts Ave	Cambridge	1882
CAM.1385	Cambridge Masonic Temple	1950 Massachusetts Ave	Cambridge	1910
CAM.244	Saint James Episcopal Church	1991 Massachusetts Ave	Cambridge	1888
CAM.245	Henderson Carriage Repository	2067-2089 Massachusetts Ave	Cambridge	1892
CAM.246	Cornerstone Baptist Church	2114 Massachusetts Ave	Cambridge	1854
CAM.247	Mead, Alpheus House	2200 Massachusetts Ave	Cambridge	1867
CAM.248	Snow, Daniel House	2210 Massachusetts Ave	Cambridge	1868
CAM.249	McLean, Isaac House	2218 Massachusetts Ave	Cambridge	1894
CAM.250	Farwell, R. H. Double House	2222-2224 Massachusetts Ave	Cambridge	1891
CAM.251	Saint John's Roman Catholic Church	2270 Massachusetts Ave	Cambridge	1904
CAM.1390		2557 Massachusetts Ave	Cambridge	
CAM.1376	Matignon Central Catholic High School	1 Matignon Rd	Cambridge	1946

Inv. No.	Property Name	Street	Town	Year
CAM.1375	Immaculate Conception Catholic Church Convent	33 Matignon Rd	Cambridge	1954
CAM.252	Cambridge Almshouse	45 Matignon Rd	Cambridge	1850
CAM.1374	Cambridge Almshouse Dormitory	45 Matignon Rd	Cambridge	1887
CAM.566	M. I. T. - Pierce, Henry L. Engineering Laboratory	Memorial Dr	Cambridge	1913
CAM.567	M. I. T. - Buildings #2 and #8	Memorial Dr	Cambridge	1913
CAM.568	M. I. T. - Pratt School of Naval Architecture	Memorial Dr	Cambridge	1919
CAM.569	M. I. T. - Homburg Infirmary	Memorial Dr	Cambridge	1927
CAM.570	M. I. T. - Eastman, George Research Laboratories	Memorial Dr	Cambridge	1931
CAM.571	M. I. T. - Rogers, William Barton Building	Memorial Dr	Cambridge	1937
CAM.572	M. I. T. - Walker Memorial	Memorial Dr	Cambridge	1913
CAM.573	M. I. T. - President's House	Memorial Dr	Cambridge	1913
CAM.574	M. I. T. - Senior House	Memorial Dr	Cambridge	1913
CAM.575	M. I. T. - Hayden Library	Memorial Dr	Cambridge	1949
CAM.930	Memorial Drive	Memorial Dr	Cambridge	1896
CAM.933	M. I. T. Memorial Underpass	Memorial Dr	Cambridge	1931
CAM.934	Reid, William J. Overpass	Memorial Dr	Cambridge	1939
CAM.1332	Little, Arthur D. Inc. Building	Memorial Dr	Cambridge	1917
CAM.1398	Lever Brothers Company Administration Building	50 Memorial Dr	Cambridge	1938
CAM.253		100 Memorial Dr	Cambridge	1950
CAM.254	M. I. T. Main Courtyard	182-226 Memorial Dr	Cambridge	1913
CAM.255	Riverbank Court Hotel	305 Memorial Dr	Cambridge	1900
cam.256	Baker House	362 Memorial Dr	Cambridge	1947
CAM.1327	Boston University Boat House	619 Memorial Dr	Cambridge	1913
CAM.257	B & B Chemical Company	780 Memorial Dr	Cambridge	1937
CAM.258	Peabody Terrace	900 Memorial Dr	Cambridge	1958
CAM.1201	Dunster House - Harvard University	945 Memorial Dr	Cambridge	1929
CAM.1202	Gore Hall - Harvard University	960 Memorial Dr	Cambridge	1913
CAM.1203	Standish Hall - Harvard University	966 Memorial Dr	Cambridge	1913
CAM.1204	Eliot House - Harvard University	967 Memorial Dr	Cambridge	1930
CAM.1324	Harvard University - Weld Boat House	971 Memorial Dr	Cambridge	1906
CAM.259	Conventual Church of Saint Mary and Saint John	980 Memorial Dr	Cambridge	1936
CAM.1267	Radnor Hall	983-984 Memorial Dr	Cambridge	1916
CAM.1268	Hampstead Hall	985-986 Memorial Dr	Cambridge	1916
CAM.1269	Barrington Court	987-989 Memorial Dr	Cambridge	1924
CAM.1270	Strathcona-on-the-Charles	992-993 Memorial Dr	Cambridge	1914
CAM.1300		2 Mercer Cir	Cambridge	1894

Inv. No.	Property Name	Street	Town	Year
CAM.1287		3 Mercer Cir	Cambridge	1885
CAM.1288		4 Mercer Cir	Cambridge	1885
CAM.1294		5 Mercer Cir	Cambridge	1887
CAM.1291		6 Mercer Cir	Cambridge	1886
CAM.1307	Harris, William F. House	7 Mercer Cir	Cambridge	1922
CAM.1289		8 Mercer Cir	Cambridge	1885
CAM.1292		9 Mercer Cir	Cambridge	1886
CAM.1151		11-15 Mifflin Pl	Cambridge	1901
CAM.1152		12-14 Mifflin Pl	Cambridge	1913
CAM.1153		17-19 Mifflin Pl	Cambridge	1972
CAM.1205	McKinlock Hall - Harvard University	8 Mill St	Cambridge	1926
CAM.1206	Leverett House Library and Towers - Harvard Univ.	14-18 Mill St	Cambridge	1958
CAM.263	Cambridge Neighborhood House	79 Moore St	Cambridge	1821
CAM.264	Reversible Collar Company Building	25-27 Mount Auburn St	Cambridge	1860
CAM.1154	Saint Paul's Rectory	32-36 Mount Auburn St	Cambridge	1924
CAM.1155	Speakers Club	43-45 Mount Auburn St	Cambridge	1845
CAM.1156		45 1/2 Mount Auburn St	Cambridge	1971
CAM.1157		47-49 Mount Auburn St	Cambridge	1926
CAM.1158	Claverly Hall	63 Mount Auburn St	Cambridge	1892
CAM.1159		65R Mount Auburn St	Cambridge	1957
CAM.1160	Ridgely Hall	65 Mount Auburn St	Cambridge	1904
CAM.1161	Manter Hall School	71-77 Mount Auburn St	Cambridge	1927
CAM.1162	Phoenix - S. K. Club	72 Mount Auburn St	Cambridge	1915
CAM.1163	Iroquois Club	74 Mount Auburn St	Cambridge	1916
CAM.1164	Spee Club	76 Mount Auburn St	Cambridge	1931
CAM.1165	Willard, Lucy House	78 Mount Auburn St	Cambridge	1839
CAM.1166		90 Mount Auburn St	Cambridge	1971
CAM.1167		92-96 Mount Auburn St	Cambridge	1895
CAM.1168		95-97 Mount Auburn St	Cambridge	1920
CAM.1169		99 Mount Auburn St	Cambridge	1919
CAM.1170	Cantabrigia Club	100 Mount Auburn St	Cambridge	1919
CAM.1171		102 Mount Auburn St	Cambridge	1869
CAM.1172		104 Mount Auburn St	Cambridge	1983
CAM.1173		110 Mount Auburn St	Cambridge	1959
CAM.9	Boston Elevated Railway Division 7 Headquarters	112 Mount Auburn St	Cambridge	1911
CAM.1175	Trinity Hall	114-120 Mount Auburn St	Cambridge	1892

Inv. No.	Property Name	Street	Town	Year
CAM.1177	Waverly Hall	115 Mount Auburn St	Cambridge	1902
CAM.1178		119-123 Mount Auburn St	Cambridge	1988
CAM.1176		120R Mount Auburn St	Cambridge	1982
CAM.1126	U. S. Post Office - Cambridge Branch	125 Mount Auburn St	Cambridge	1953
CAM.791		151 Mount Auburn St	Cambridge	1853
CAM.792		153 Mount Auburn St	Cambridge	1874
CAM.789		154 Mount Auburn St	Cambridge	1852
CAM.790		156-158 Mount Auburn St	Cambridge	1856
CAM.265		173 Mount Auburn St	Cambridge	1905
CAM.266		175 Mount Auburn St	Cambridge	1895
CAM.267		259 Mount Auburn St	Cambridge	1850
CAM.268	Mount Auburn Hospital - Surgical Building	330 Mount Auburn St	Cambridge	1897
CAM.269	Mount Auburn Hospital - Main Building	330 Mount Auburn St	Cambridge	1886
CAM.936	Mount Auburn Cemetery Fence and Gates	580 Mount Auburn St	Cambridge	1843
CAM.270	Mount Auburn Cemetery Reception House	583 Mount Auburn St	Cambridge	1870
CAM.1330	DeRosay - McNamee House	50 Mount Vernon St	Cambridge	1896
CAM.557		1-2 Norfolk Pl	Cambridge	1844
CAM.558		3 Norfolk Pl	Cambridge	1846
CAM.593	Powers, Hannah - Ginsberg, Harris Building	7-15 Norfolk St	Cambridge	1894
CAM.562	Hotel Norfolk	30 Norfolk St	Cambridge	1886
CAM.560		51 Norfolk St	Cambridge	1885
CAM.561		59 Norfolk St	Cambridge	1886
CAM.554		65-67 Norfolk St	Cambridge	1844
CAM.559	Pollard, John House	68-72 Norfolk St	Cambridge	1859
CAM.552		69 Norfolk St	Cambridge	1843
CAM.555		71-73 Norfolk St	Cambridge	1844
CAM.556		75-77 Norfolk St	Cambridge	1844
CAM.551	Fuller, Robert House	79 Norfolk St	Cambridge	1843
CAM.553		87 Norfolk St	Cambridge	1843
CAM.563	Hotel Franklin	90 Norfolk St	Cambridge	1886
CAM.1392	Saint Mary of the Annunciation Catholic Church	134 Norfolk St	Cambridge	1865
CAM.550		1-2 Norfolk Terr	Cambridge	1839
CAM.913	East Cambridge Viaduct - Lechmere Viaduct	O'Brien Hwy	Cambridge	1910
CAM.349	Lockhart, William L. Coffin Factory Warehouse	195-199 O'Brien Hwy	Cambridge	1873
CAM.271	Barnes, James B. House	200 O'Brien Hwy	Cambridge	1824
CAM.348	Lockhart, William L. Coffin Factory Main Building	201 O'Brien Hwy	Cambridge	1870
CAM.272	Lockart, William L. Company Building	209 O'Brien Hwy	Cambridge	1859
CAM.273	Aborn, John House	41 Orchard St	Cambridge	1846

Inv. No.	Property Name	Street	Town	Year
CAM.274	Billings, Frederick House	45 Orchard St	Cambridge	1846
CAM.1310	Davenport - Allen and Endicott Factory West Wing	Osborn St	Cambridge	1848
CAM.1311	Davenport - Allen Factory West Wing Extension	Osborn St	Cambridge	1848
CAM.1312	Allen and Endicott Factory Extension	Osborn St	Cambridge	1896
CAM.1313	Allen and Endicott Factory Extension	Osborn St	Cambridge	1896
CAM.461	Putnam School	Otis St	Cambridge	1889
CAM.465	Saint Hedwig's Parish Church	Otis St	Cambridge	1939
CAM.468	Otis Hospital	Otis St	Cambridge	
CAM.371	Woodbury, James A. - Geldowsky, Ferdinand Building	2-28 Otis St	Cambridge	1869
CAM.374		31 Otis St	Cambridge	1900
CAM.473	Hall, Lewis and William A. Rowhouse	55 Otis St	Cambridge	1851
CAM.474	Hall, Lewis and William A. Rowhouse	57 Otis St	Cambridge	1851
CAM.475	Hall, Lewis and William A. Rowhouse	59 Otis St	Cambridge	1851
CAM.485	Hazard, Samuel L. House	60 Otis St	Cambridge	1871
CAM.476	Hall, Lewis and William A. Rowhouse	61 Otis St	Cambridge	1851
CAM.484		62 Otis St	Cambridge	
CAM.472	Sortwell, Daniel R. Double House	63-65 Otis St	Cambridge	1871
CAM.483		64 Otis St	Cambridge	
CAM.471		65 1/2 Otis St	Cambridge	
CAM.482	Jones, Andrew - Hall, William A. Double House	66-68 Otis St	Cambridge	1846
CAM.470	Goss, Abiel Double House	67-69 Otis St	Cambridge	1839
CAM.481		70 Otis St	Cambridge	
CAM.469		73-75 Otis St	Cambridge	
CAM.480		74 Otis St	Cambridge	
CAM.479		78 Otis St	Cambridge	
CAM.477	Clark, Josias - Cummings, Daniel P. Rowhouse	80 Otis St	Cambridge	1861
CAM.478	Clark, Josias - Cummings, Daniel P. Rowhouse	82 Otis St	Cambridge	1861
CAM.467	Deshon, Royal P. House	93 Otis St	Cambridge	1842
CAM.460		94 Otis St	Cambridge	
CAM.466		95-97 Otis St	Cambridge	
CAM.459		96 Otis St	Cambridge	
CAM.458		98 Otis St	Cambridge	
CAM.457	Taylor, Oliver House	100 Otis St	Cambridge	1848
CAM.455	Adams, Jabez F. - Atwood, Samuel S. Rowhouse	102 Otis St	Cambridge	1848
CAM.464	Bridgeman, John L. Double House	103-105 Otis St	Cambridge	1843
CAM.456	Adams, Jabez F. - Atwood, Samuel S.	104 Otis St	Cambridge	1848

Inv. No.	Property Name	Street	Town	Year
	Rowhouse			
CAM.454		106-108 Otis St	Cambridge	
CAM.463		107-109 Otis St	Cambridge	
CAM.453		110 Otis St	Cambridge	
CAM.462		113 Otis St	Cambridge	
CAM.439		117 1/2 Otis St	Cambridge	
CAM.440		117-119 Otis St	Cambridge	
CAM.451		118 Otis St	Cambridge	
CAM.450		120 Otis St	Cambridge	
CAM.448	Dennison, James Double House	122-124 Otis St	Cambridge	1870
CAM.449		122 1/2-124 1/2 Otis St	Cambridge	
CAM.438		123 Otis St	Cambridge	
CAM.437		125-127 Otis St	Cambridge	
CAM.447		126-128 Otis St	Cambridge	
CAM.436		129-131 Otis St	Cambridge	
CAM.446		130 Otis St	Cambridge	
CAM.445		132 Otis St	Cambridge	
CAM.435		133-135 Otis St	Cambridge	
CAM.275	Hoyt, Benjamin House	134 Otis St	Cambridge	1868
CAM.443		136-138 Otis St	Cambridge	
CAM.434	Warren, Moses - Smith, Benjamin G. Rowhouse	137 Otis St	Cambridge	1852
CAM.1339	Warren, Moses - Smith, Benjamin G. Rowhouse	139 Otis St	Cambridge	1852
CAM.442		140 Otis St	Cambridge	1895
CAM.1340	Warren, Moses - Smith, Benjamin G. Rowhouse	141 Otis St	Cambridge	1852
CAM.1341	Warren, Moses - Smith, Benjamin G. Rowhouse	143 Otis St	Cambridge	1852
CAM.1342	Warren, Moses - Smith, Benjamin G. Rowhouse	145 Otis St	Cambridge	1852
CAM.433	Fraser, John B. Double House	147-149 Otis St	Cambridge	1846
CAM.432		151 Otis St	Cambridge	
CAM.1179	Coop Annex	18 Palmer St	Cambridge	1964
CAM.276	Urban Rowhouse	30-38 Pearl St	Cambridge	1874
CAM.277	Urban Rowhouse	40-50 Pearl St	Cambridge	1875
CAM.278	Valentine Soap Workers' Cottage	101 Pearl St	Cambridge	1835
CAM.1368	Blessed Sacrament Roman Catholic Church	175 Pearl St	Cambridge	1907
CAM.1370	Blessed Sacrament Roman Catholic Church Rectory	189 Pearl St	Cambridge	1868
CAM.279		3 Phillips Pl	Cambridge	
CAM.280		5 Phillips Pl	Cambridge	1845
CAM.281		7 Phillips Pl	Cambridge	1898

Inv. No.	Property Name	Street	Town	Year
CAM.282		9 Phillips Pl	Cambridge	1870
CAM.1180	Harvard Crimson Newspaper Office	14-18 Plympton St	Cambridge	1915
CAM.1181	Crimson Building Annex	22 Plympton St	Cambridge	1961
CAM.1182	Adams House Dining Hall	28 Plympton St	Cambridge	1930
CAM.1183	Russell Hall	28 Plympton St	Cambridge	1931
CAM.1184	Russell Hall	30-30A Plympton St	Cambridge	1887
CAM.1207	Quincy House - Harvard University	58 Plympton St	Cambridge	1958
CAM.1208	Mather Hall - Harvard University	68-88 Plympton St	Cambridge	1930
CAM.1209		101-103 Plympton St	Cambridge	1870
CAM.1382	Brooks Apartments - Winthrop, John Chambers	78-80 Porter Rd	Cambridge	1915
CAM.283	Willis, Stillman House	1 Potter Pk	Cambridge	1839
CAM.284	Saunders, William House	6 Prentiss St	Cambridge	1843
CAM.1352	Beck - Warren House	1 Prescott St	Cambridge	1833
CAM.285		16 Prescott St	Cambridge	1873
CAM.291	Carpenter Center for the Visual Arts	19 Prescott St	Cambridge	1963
CAM.582	New England Gas and Electric Association I Bldg	45 Prospect St	Cambridge	1960
CAM.286	Prospect Congregational Church	99 Prospect St	Cambridge	1851
CAM.287	Baldwin, Maria House	196 Prospect St	Cambridge	1845
CAM.288	Sands, Hiram House	22 Putnam Ave	Cambridge	1848
CAM.293	Harvard Union	Quincy St	Cambridge	1900
CAM.986	Harvard University - Hallowell Gate	10 Quincy St	Cambridge	1928
CAM.289	Dana, Richard Henry - Palmer, George Herbert House	12-16 Quincy St	Cambridge	1822
CAM.952	Harvard University - Quincy Street Gate	17 Quincy St	Cambridge	1936
CAM.1213	Harvard University - President's House	17 Quincy St	Cambridge	1911
CAM.290	Fogg Art Museum	26-32 Quincy St	Cambridge	1925
CAM.292	Church of the New Jerusalem	50 Quincy St	Cambridge	1903
CAM.1266		60 Raymond St	Cambridge	1927
CAM.298	Mason, W. A. House	87 Raymond St	Cambridge	1846
CAM.299	Stickney, N. U. - Shepard, S. P. Double House	11-13 Remington St	Cambridge	1846
CAM.300	Hooper, Edward W. - Eliot, Rev. Samuel A. House	25-27 Reservoir Rd	Cambridge	1872
CAM.301		59 Rice St	Cambridge	1847
CAM.327	Hews Pottery Company Carriage House	202 Richdale Ave	Cambridge	1897
CAM.302	Kidder - Sargent - McCrehan House	146 Rindge Ave	Cambridge	1792
CAM.303	Wyeth Brickyard Superintendent's House	336 Rindge Ave	Cambridge	1848
CAM.923	River Street Bridge	River St	Cambridge	1926
CAM.304	Urban Rowhouse	26-32 River St	Cambridge	1860

Inv. No.	Property Name	Street	Town	Year
CAM.330	Ricker, George and Jerediah House	109-113 River St	Cambridge	1844
CAM.305	River Street Firehouse	176 River St	Cambridge	1890
CAM.1211		11 Riverview Ave	Cambridge	1899
CAM.922	Boston University Bridge	Rt 2	Cambridge	1928
CAM.306	Soule, Lawrence Porter House	11 Russell St	Cambridge	1879
CAM.307	Wood, James A. House	3 Sacramento St	Cambridge	1888
CAM.1239	Winthrop Hall - Episcopal Theological School	Saint John's Rd	Cambridge	1892
CAM.529		6-8 Salem St	Cambridge	1829
CAM.530		10 Salem St	Cambridge	1840
CAM.531		15 Salem St	Cambridge	1841
CAM.415	Hastings, Deborah House	72 Sciarappa St	Cambridge	1823
CAM.416		74 Sciarappa St	Cambridge	
CAM.401	Pendexter, Charles House	80-82 Sciarappa St	Cambridge	1847
CAM.1321	Boston Museum of Science	Science Park	Cambridge	1951
CAM.1322	Hayden Planetarium	Science Park	Cambridge	1958
CAM.770		2 Scott St	Cambridge	1889
CAM.771	Thaxter, Roland House	7 Scott St	Cambridge	1891
CAM.772		8 Scott St	Cambridge	1889
CAM.773		11 Scott St	Cambridge	1893
CAM.774		12 Scott St	Cambridge	1894
CAM.775		14 Scott St	Cambridge	1927
CAM.776		18 Scott St	Cambridge	1928
CAM.375	Roby, Ebenezer Rowhouse	30 Second St	Cambridge	1836
CAM.376	Roby, Ebenezer Rowhouse	32 Second St	Cambridge	1836
CAM.377	Roby, Ebenezer Rowhouse	34 Second St	Cambridge	1836
CAM.364	Hall, Jesse Rowhouse	36 Second St	Cambridge	1842
CAM.365	Hall, Jesse Rowhouse	38 Second St	Cambridge	1842
CAM.366	Hall, Jesse Rowhouse	40 Second St	Cambridge	1842
CAM.367	Hall, Jesse Rowhouse	42 Second St	Cambridge	1842
CAM.368	Hall, Jesse Rowhouse	44 Second St	Cambridge	1842
CAM.369	Hall, Jesse Rowhouse	46 Second St	Cambridge	1842
CAM.370		50 Second St	Cambridge	
CAM.308	American Net and Twine Company Factory	155R Second St	Cambridge	1875
CAM.777		1 Shady Hill Sq	Cambridge	1915
CAM.778		2-3 Shady Hill Sq	Cambridge	1915
CAM.779		4-5 Shady Hill Sq	Cambridge	1915
CAM.780		6-7 Shady Hill Sq	Cambridge	1915
CAM.781		8-9 Shady Hill Sq	Cambridge	1915

Inv. No.	Property Name	Street	Town	Year
CAM.782		10-11 Shady Hill Sq	Cambridge	1915
CAM.783		12 Shady Hill Sq	Cambridge	1915
CAM.309	Eliot Hall	51 Shepard St	Cambridge	1907
CAM.310	Bertram Hall	53 Shepard St	Cambridge	1901
CAM.311	Watson, Abraham Jr. House	181-183 Sherman St	Cambridge	1750
CAM.506	Sacred Heart Roman Catholic Church	39 Sixth St	Cambridge	1874
CAM.431		40 Sixth St	Cambridge	
CAM.508	Sacred Heart Roman Catholic Church Rectory	49 Sixth St	Cambridge	1885
CAM.927	Eliot Bridge	Soldier's Field Rd	Cambridge	1950
CAM.1210	Bryan Hall - Harvard University	14-24 South St	Cambridge	1930
CAM.312	Stedman, Samuel House	17 South St	Cambridge	1826
CAM.1185	Harvard Advocate Building	21 South St	Cambridge	1956
CAM.313	Dodge, Edward House	70 Sparks St	Cambridge	1878
CAM.325	Harugari Hall	154 Spring St	Cambridge	1873
CAM.1186		4-6 Story St	Cambridge	1966
CAM.1187		8-12 Story St	Cambridge	1969
CAM.1188		14-16 Story St	Cambridge	1970
CAM.353	Blake and Knowles Core Shop #1	Third St	Cambridge	1889
CAM.354	Blake and Knowles Core Shop #2	Third St	Cambridge	1890
CAM.505	Lechmere Point Corporation Row House	25 Third St	Cambridge	1821
CAM.381	Rollins, John W. Rowhouse	83 Third St	Cambridge	1860
CAM.382	Rollins, John W. Rowhouse	85 Third St	Cambridge	1860
CAM.383	Rollins, John W. Rowhouse	87 Third St	Cambridge	1860
CAM.384	Rollins, John W. Rowhouse	89 Third St	Cambridge	1860
CAM.331	Old Middlesex County Superior Courthouse	90 Third St	Cambridge	1814
CAM.385	Rollins, John W. Rowhouse	91 Third St	Cambridge	1860
CAM.386	Rollins, John W. Rowhouse	93 Third St	Cambridge	1860
CAM.387	Rollins, John W. Rowhouse	95 Third St	Cambridge	1860
CAM.314	Holy Cross Polish National Catholic Church	99 Third St	Cambridge	1827
CAM.315	Bottle House Block	204-214 Third St	Cambridge	1826
CAM.350	Blake and Knowles Machine Shop #1	265 Third St	Cambridge	1889
CAM.351	Blake and Knowles Office Headhouse	265 Third St	Cambridge	1892
CAM.355	Blake and Knowles Smith Shop and Brass Foundry	275 Third St	Cambridge	1890
CAM.326	Cambridge Gas Light Company Purifying Plant	354 Third St	Cambridge	1908
CAM.388	Stevens, Atherton H. Rowhouse	59 Thorndike St	Cambridge	1827
CAM.395	Smallidge, Samuel House	66 Thorndike St	Cambridge	1827
CAM.389	Bates, Moses Jr. House	69 Thorndike St	Cambridge	1844

Inv. No.	Property Name	Street	Town	Year
CAM.396	Buck, Silas B. House	70 Thorndike St	Cambridge	1845
CAM.390	Tufts, Sophia Kimball Double House	71-73 Thorndike St	Cambridge	1857
CAM.397	Wellington, Peter House	74 Thorndike St	Cambridge	1843
CAM.391		75 Thorndike St	Cambridge	
CAM.398		76 Thorndike St	Cambridge	
CAM.392		77 Thorndike St	Cambridge	
CAM.399		78 Thorndike St	Cambridge	
CAM.393		79-81 Thorndike St	Cambridge	
CAM.400		80 Thorndike St	Cambridge	
CAM.394		83 Thorndike St	Cambridge	
CAM.402	Stickney, Francis H. - Davies, Benjamin Rowhouse	84 Thorndike St	Cambridge	1867
CAM.417	Clark, Cornelius - Kneeland, W. W. House	85 Thorndike St	Cambridge	1822
CAM.403	Stickney, Francis H. - Davies, Benjamin Rowhouse	86 Thorndike St	Cambridge	1867
CAM.404	Stickney, Francis H. - Davies, Benjamin Rowhouse	88 Thorndike St	Cambridge	1867
CAM.418		89-91 Thorndike St	Cambridge	
CAM.405	Stickney, Francis H. - Davies, Benjamin Rowhouse	90 Thorndike St	Cambridge	1867
CAM.406	Stickney, Francis H. - Davies, Benjamin Rowhouse	92 Thorndike St	Cambridge	1867
CAM.419	Whitacre, Celeste I. Rowhouse	93 Thorndike St	Cambridge	1885
CAM.407	Stickney, Francis H. - Davies, Benjamin Rowhouse	94 Thorndike St	Cambridge	1867
CAM.420	Whitacre, Celeste I. Rowhouse	95 Thorndike St	Cambridge	1885
CAM.408	Train, Isaac House	96 Thorndike St	Cambridge	1826
CAM.421	Whitacre, Celeste I. Rowhouse	97 Thorndike St	Cambridge	1885
CAM.422	Davies, Daniel House	97 1/2 Thorndike St	Cambridge	1843
CAM.409		98 Thorndike St	Cambridge	
CAM.423		99 Thorndike St	Cambridge	
CAM.424	Daniels, Granville W. House	101 Thorndike St	Cambridge	1868
CAM.410		102 Thorndike St	Cambridge	
CAM.411	Spare, Elijah Jr. Double House	104-106 Thorndike St	Cambridge	1846
CAM.425	Eaton, Charles House	109 Thorndike St	Cambridge	1857
CAM.412	Quimby, Amos House	110 Thorndike St	Cambridge	1857
CAM.426		111-113 Thorndike St	Cambridge	
CAM.413	Stickney, Francis H. Double House	112-114 Thorndike St	Cambridge	1863
CAM.427		113 1/2 Thorndike St	Cambridge	
CAM.414	Bacon, Henry A. House	116 Thorndike St	Cambridge	1865

Inv. No.	Property Name	Street	Town	Year
CAM.507	Sacred Heart Roman Catholic School and Convent	163 Thorndike St	Cambridge	1902
CAM.316	Craigie Arms	2-6 University Rd	Cambridge	1897
CAM.317	Wyeth, Jacob - Smith, Ebenezer House	152 Vassal Ln	Cambridge	1820
CAM.360	Metropolitan Supply Company Warehouse	269 Vassar St	Cambridge	1948
CAM.361	Hovey, F. A. and Company Warehouse	271-275 Vassar St	Cambridge	1940
CAM.362	Metropolitan Supply Company Warehouse	277-287 Vassar St	Cambridge	1939
CAM.363	Metropolitan Supply Company Warehouse	289-293 Vassar St	Cambridge	1939
CAM.989	Walden Street Cattle Pass	Walden St	Cambridge	1857
CAM.1283	Bennink - Douglas Double Cottage	35-37 Walker St	Cambridge	1874
CAM.1284	Bennink - Douglas Double Cottage	39-41 Walker St	Cambridge	1874
CAM.1285	Bennink - Douglas Double Cottage	43-45 Walker St	Cambridge	1874
CAM.1286	Bennink - Douglas Double Cottage	49-51 Walker St	Cambridge	1874
CAM.1034	Sands, Orrin E. House	2 Walnut Ave	Cambridge	1911
CAM.1032		4 Walnut Ave	Cambridge	1878
CAM.1033	Niles, Jacob Harris House	6 Walnut Ave	Cambridge	1884
CAM.1031	Niles, Eugene M. House	9 Walnut Ave	Cambridge	1887
CAM.318	Stanstead, The	19 Ware St	Cambridge	1887
CAM.799	Ritchie, David House	26 Washington Ave	Cambridge	1889
CAM.793	Brown, Laura House	27 Washington Ave	Cambridge	1908
CAM.794	Mellen, James House	33 Washington Ave	Cambridge	1887
CAM.795	Kelley, Stillman F. House	49 Washington Ave	Cambridge	1887
CAM.1000	Boardman, Charles House	58 Washington Ave	Cambridge	1880
CAM.797	Mansfield, Gardiner House	63 Washington Ave	Cambridge	1873
CAM.798	Green, Charles G. House	71 Washington Ave	Cambridge	1877
CAM.1001	Boynton, Morris House	78 Washington Ave	Cambridge	1874
CAM.1002		86-88 Washington Ave	Cambridge	1870
CAM.1003		92 Washington Ave	Cambridge	1876
CAM.1004	Hutchins, Elizabeth House	108 Washington Ave	Cambridge	1924
CAM.319	Melendy, Henry J. House	81 Washington St	Cambridge	1871
CAM.541	Whittemore, Rev. Thomas Double House	271-273 Washington St	Cambridge	1837
CAM.540	Whittemore, Rev. Thomas Double House	288 Washington St	Cambridge	1837
CAM.539	Paige, Rev. Lucius R. House	296 Washington St	Cambridge	1837
CAM.346		1 Waterhouse St	Cambridge	1916
CAM.320	Vassall - Waterhouse - Ware House	7 Waterhouse St	Cambridge	1753
CAM.347		9 Waterhouse St	Cambridge	1887
CAM.335	Christian Science Church	13 Waterhouse St	Cambridge	1923
CAM.988	Fort Washington	95 Waverly St	Cambridge	

Inv. No.	Property Name	Street	Town	Year
CAM.924	Western Avenue Bridge	Western Ave	Cambridge	1924
CAM.638	Cambridge Police Headquarters	5 Western Ave	Cambridge	1933
CAM.948	Central Square Park	22 Western Ave	Cambridge	1987
CAM.321	Read, Cheney House	135 Western Ave	Cambridge	1846
CAM.323	Hasey, Abraham - Wheat, Dr. Samuel House	8 Willard St	Cambridge	1730
CAM.514	Hixon, Edward House	3 William St	Cambridge	1857
CAM.1378	Immaculate Conception (Lithuanian) Catholic Church	432 Windsor St	Cambridge	1910
CAM.1379	Immaculate Conception (Lithuanian) Church Rectory	432 Windsor St	Cambridge	1972
CAM.1380	Immaculate Conception Church Rectory Metal Garage	432 Windsor St	Cambridge	1941
CAM.1381	Immaculate Conception Church Rectory Wood Garage	432 Windsor St	Cambridge	1948
CAM.500		19 Winter St	Cambridge	1855
CAM.492		21 Winter St	Cambridge	1854
CAM.486	Leighton, Thomas H. House	22 Winter St	Cambridge	1833
CAM.491		24 Winter St	Cambridge	1854
CAM.493		25 Winter St	Cambridge	1854
CAM.494		27 Winter St	Cambridge	1854
CAM.496		28-30 Winter St	Cambridge	1854
CAM.495		29 Winter St	Cambridge	1854
CAM.497		31-33 Winter St	Cambridge	1854
CAM.501		34-42 Winter St	Cambridge	1875
CAM.498		61 Winter St	Cambridge	1854
CAM.499		65 Winter St	Cambridge	1854
CAM.489	Stevens, Atherton Haugh House	67 Winter St	Cambridge	1843
CAM.490	Stevens, Atherton Haugh House	71 Winter St	Cambridge	1843
CAM.487	Stevens, Atherton Haugh House	74 Winter St	Cambridge	1838
CAM.1344		75 Winter St	Cambridge	
CAM.1345	Stevens, Atherton Haugh House	77 Winter St	Cambridge	1838
CAM.488	Stevens, Atherton Haugh House	79 Winter St	Cambridge	1838
CAM.1189	Metcalf, Lydia House	41 Winthrop St	Cambridge	1845
CAM.1190		65-67 Winthrop St	Cambridge	1887
CAM.1191	University Lutheran Church	66 Winthrop St	Cambridge	1950
CAM.1192		69 Winthrop St	Cambridge	1835
CAM.1193	Pi Eta Club	89 Winthrop St	Cambridge	1908
CAM.1194	Pi Eta Hall	95 Winthrop St	Cambridge	1896
CAM.1195	Hyde, Isaac - Taylor House	96 Winthrop St	Cambridge	1845

Inv. No.	Property Name	Street	Town	Year
CAM.329	Cox - Hicks House	98 Winthrop St	Cambridge	1806
CAM.951	Winthrop Street Retaining Wall	98 Winthrop St	Cambridge	1725
CAM.1196	Dame School	106 Winthrop St	Cambridge	1800
CAM.909	Yerxa Street Pedestrian Subway	Yerxa St	Cambridge	1904
CAM.1391	Saint Patrick's Roman Catholic Church	40-50 York St	Cambridge	

APPENDIX G

Endangered Species Act Documentation

United States Department of the Interior

FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
http://www.fws.gov/newengland

January 20, 2017

To Whom It May Concern:

This project was reviewed for the presence of federally listed or proposed, threatened or endangered species or critical habitat per instructions provided on the U.S. Fish and Wildlife Service's New England Field Office website:

http://www.fws.gov/newengland/EndangeredSpec-Consultation.htm (accessed January 2017)

Based on information currently available to us, no federally listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area(s). Preparation of a Biological Assessment or further consultation with us under section 7 of the Endangered Species Act is not required. No further Endangered Species Act coordination is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

Thank you for your cooperation. Please contact Maria Tur of this office at 603-223-2541 if we can be of further assistance.

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office

United States Department of the Interior

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

In Reply Refer To: September 13, 2017
Consultation Code: 05E1NE00-2017-SLI-2684
Event Code: 05E1NE00-2017-E-05911
Project Name: MIT.nano Project - Phase 3: North Corridor

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

To Whom It May Concern:

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

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

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

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the

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

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

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

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

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

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

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

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

Project Summary

Consultation Code: 05E1NE00-2017-SLI-2684

Event Code: 05E1NE00-2017-E-05911

Project Name: MIT.nano Project - Phase 3: North Corridor

Project Type: DEVELOPMENT

Project Description: NPDES RGP Permit

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.36077164352456N71.0925965639043W

Counties: Middlesex, MA

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. 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.

Critical habitats

There are no critical habitats within your project area under this office's jurisdiction.

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

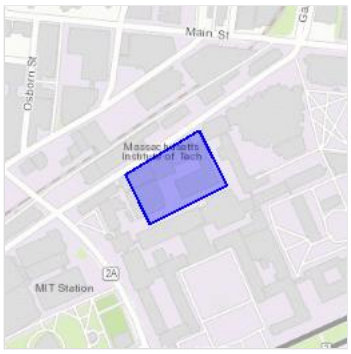
IPaC resource list

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] are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service.

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.

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 activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service[3]. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured. Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and 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.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

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 USFWS Birds of Conservation Concern that might be affected by activities in this location. The list does not contain every bird you may find in this location, nor is it guaranteed that all of the birds on the list will be found on or near this location. To get a better idea of the specific locations where certain species have been reported and their level of occurrence, please refer to resources such as the E-bird data mapping tool (year-round bird sightings by birders and the general public) and Breeding Bird Survey (relative abundance maps for breeding birds). Although it is important to try to avoid and minimize impacts to all birds, special attention should be given to the birds on the list below. To get a list of all birds potentially present in your project area, visit the E-bird Explore Data Tool.

NAME	BREEDING SEASON
Black-billed Cuckoo Coccyzus erythropthalmus https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10

Bobolink Dolichonyx oryzivorus	Breeds May 20 to Jul 31
Buff-breasted Sandpiper Tryngites subruficollis	Breeds elsewhere
Canada Warbler Wilsonia canadensis	Breeds May 20 to Aug 10
Cerulean Warbler Dendroica cerulea https://ecos.fws.gov/ecp/species/2974	Breeds Aug 20 to Jul 20
Dunlin Calidris alpina arcticola	Breeds elsewhere
Eastern Whip-poor-will Caprimulgus vociferus	Breeds May 1 to Aug 20
Evening Grosbeak Coccothraustes vespertinus	Breeds elsewhere
Golden-winged Warbler Vermivora chrysoptera https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Kentucky Warbler Oporornis formosus	Breeds Apr 20 to Aug 20
King Rail Rallus elegans https://ecos.fws.gov/ecp/species/8936	Breeds May 1 to Sep 5
Lesser Yellowlegs Tringa flavipes https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Long-eared Owl asio otus https://ecos.fws.gov/ecp/species/3631	Breeds elsewhere
Nelson's Sparrow Ammodramus nelsoni	Breeds May 15 to Sep 5
Prairie Warbler Dendroica discolor	Breeds May 1 to Jul 31
Prothonotary Warbler Protonotaria citrea	Breeds Apr 1 to Jul 31
Red-headed Woodpecker Melanerpes erythrocephalus	Breeds May 10 to Sep 10
Red-throated Loon Gavia stellata	Breeds elsewhere
Rusty Blackbird Euphagus carolinus	Breeds elsewhere
Saltmarsh Sparrow Ammodramus caudacutus	Breeds May 15 to Sep 5
Semipalmated Sandpiper Calidris pusilla	Breeds elsewhere
Short-billed Dowitcher Limnodromus griseus https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Whimbrel Numenius phaeopus https://ecos.fws.gov/ecp/species/9483	Breeds elsewhere
Wood Thrush Hylocichla mustelina	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties 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.

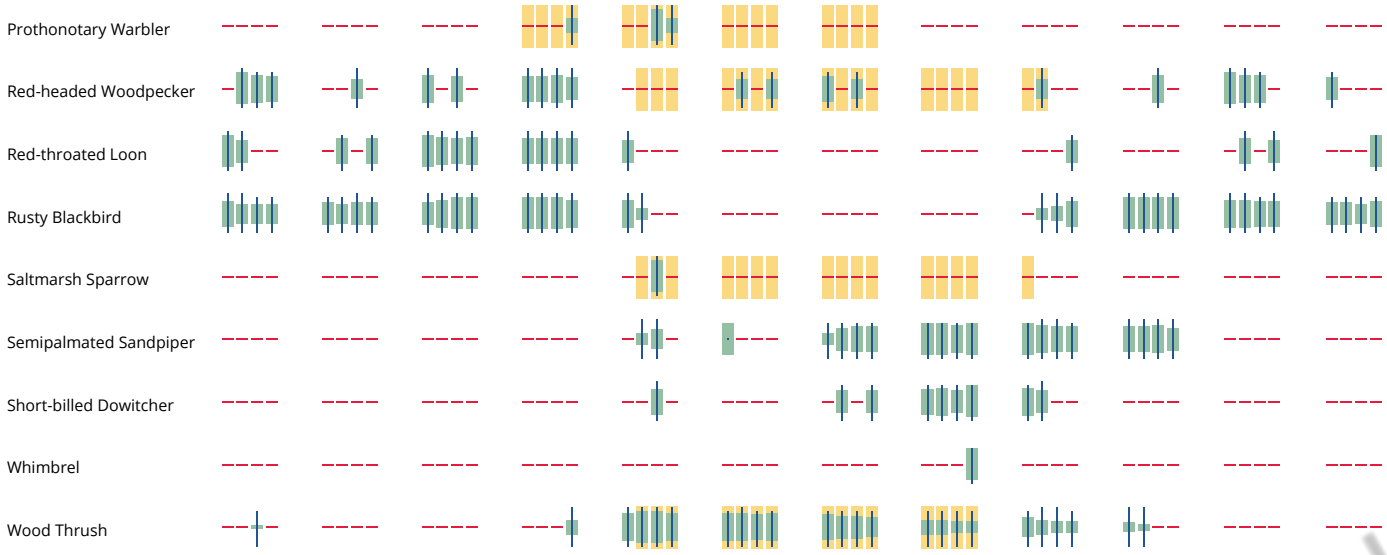
Breeding Season (▪)
Yellow bars denote when the bird breeds in the Bird Conservation Region(s) in which your project lies. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. 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.



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. Such measures are particularly important when birds are most likely to occur in the project area. To see when birds are most likely to occur in your project area, view the Probability of Presence Summary. Special attention should be made to look for nests and avoid nest destruction during the breeding season. The best information about when birds are breeding can be found in Birds of North America (BNA) Online under the "Breeding Phenology" section of each species profile. Note that accessing this information may require a subscription. Additional measures and/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) that might be affected by activities in your project location. These birds are of priority concern because it has been determined that without additional conservation actions, they are likely to become candidates for listing under the Endangered Species Act (ESA).

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. The AKN list represents all birds reported to be occurring at some level throughout the year in the counties in which your project lies. That list is then narrowed to only the Birds of Conservation Concern for your project area.

Again, the Migratory Bird Resource list only includes species of particular priority concern, and is not representative of all birds that may occur in your project area. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data 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.

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 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 entry on your migratory bird species list indicates a breeding season, it is probable the bird breeds in your project's counties at some point within the time-frame specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Facilities

Wildlife refuges

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

THERE ARE NO REFUGES 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.

THERE ARE NO KNOWN 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.

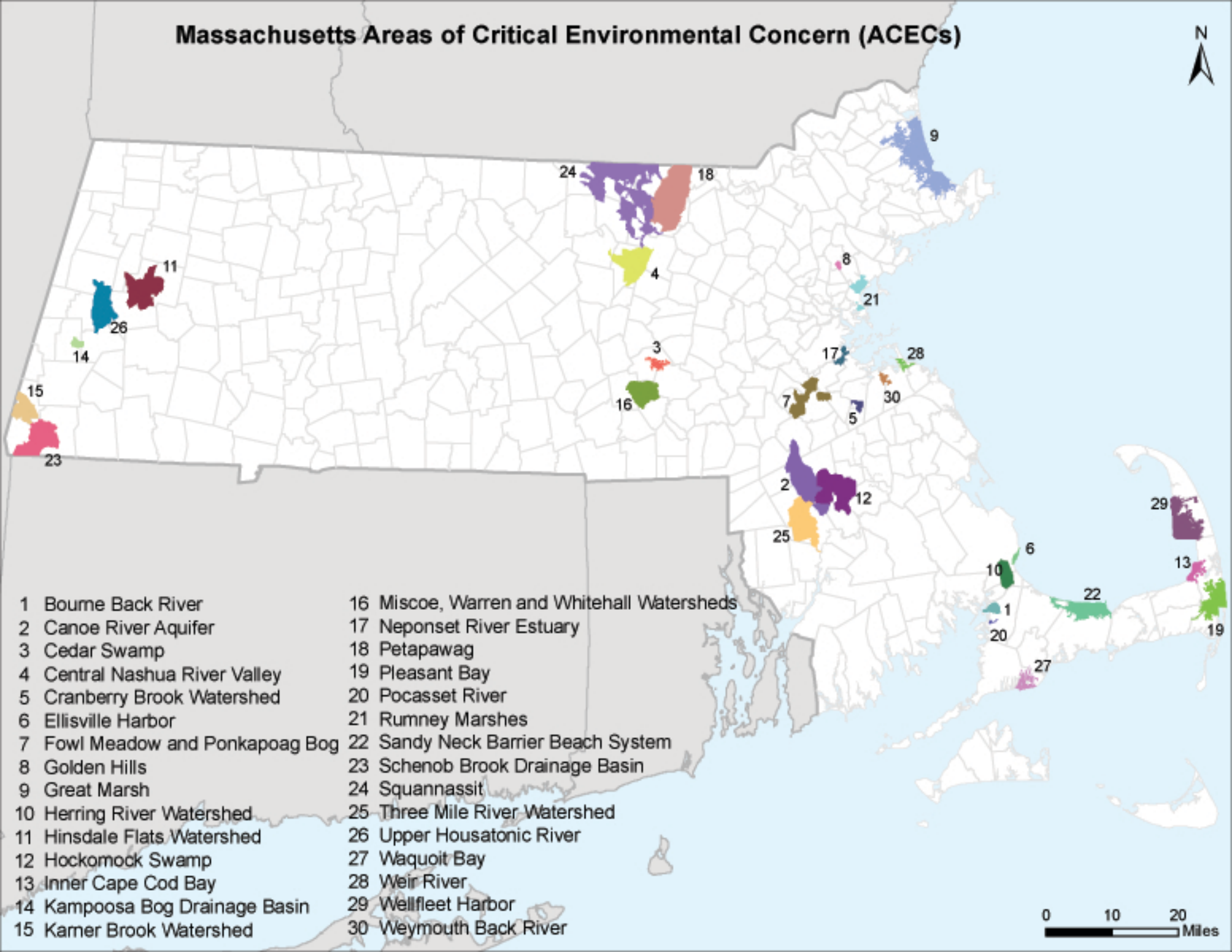
Data exclusions

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.

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

MASSACHUSETTS AREAS OF CRITICAL ENVIRONMENTAL CONCERN
November 2010

Total Approximate Acreage: 268,000 acres
Approximate acreage and designation date follow ACEC names below.

Bourne Back River
(1,850 acres, 1989) Bourne

Canoe River Aquifer and Associated Areas (17,200 acres, 1991) Easton, Foxborough, Mansfield, Norton, Sharon, and Taunton

Cedar Swamp
(1,650 acres, 1975) Hopkinton and Westborough

Central Nashua River Valley
(12,900 acres, 1996) Bolton, Harvard, Lancaster, and Leominster

Cranberry Brook Watershed
(1,050 acres, 1983) Braintree and Holbrook

Ellisville Harbor
(600 acres, 1980) Plymouth

Fowl Meadow and Ponkapoag Bog
(8,350 acres, 1992) Boston, Canton, Dedham, Milton, Norwood, Randolph, Sharon, and Westwood

Golden Hills
(500 acres, 1987) Melrose, Saugus, and Wakefield

Great Marsh (originally designated as Parker River/Essex Bay)
(25,500 acres, 1979) Essex, Gloucester, Ipswich, Newbury, and Rowley

Herring River Watershed
(4,450 acres, 1991) Bourne and Plymouth

Hinsdale Flats Watershed
(14,500 acres, 1992) Dalton, Hinsdale, Peru, and Washington

Hockomock Swamp
(16,950 acres, 1990) Bridgewater, Easton, Norton, Raynham, Taunton, and West Bridgewater

Inner Cape Cod Bay
(2,600 acres, 1985) Brewster, Eastham, and Orleans

Kampoosa Bog Drainage Basin
(1,350 acres, 1995) Lee and Stockbridge

Karner Brook Watershed
(7,000 acres, 1992) Egremont and Mount Washington

Miscoe, Warren, and Whitehall Watersheds
(8,700 acres, 2000) Grafton, Hopkinton, and Upton

Neponset River Estuary
(1,300 acres, 1995) Boston, Milton, and Quincy

Petapawag
(25,680 acres, 2002) Ayer, Dunstable, Groton, Pepperell, and Tyngsborough

Pleasant Bay
(9,240 acres, 1987) Brewster, Chatham, Harwich, and Orleans

Pocasset River
(160 acres, 1980) Bourne

Rumney Marshes
(2,800 acres, 1988) Boston, Lynn, Revere, Saugus, and Winthrop

Sandy Neck Barrier Beach System
(9,130 acres, 1978) Barnstable and Sandwich

Schenob Brook Drainage Basin
(13,750 acres, 1990) Mount Washington and Sheffield

Squannassit
(37,420 acres, 2002) Ashby, Ayer, Groton, Harvard, Lancaster, Lunenburg, Pepperell, Shirley, and Townsend

Three Mile River Watershed
(14,280 acres, 2008) Dighton, Norton, Taunton

Upper Housatonic River
(12,280 acres, 2009) Lee, Lenox, Pittsfield, Washington

Waquoit Bay
(2,580 acres, 1979) Falmouth and Mashpee

Weir River
(950 acres, 1986) Cohasset, Hingham, and Hull

Wellfleet Harbor
(12,480 acres, 1989) Eastham, Truro, and Wellfleet

Weymouth Back River
(800 acres, 1982) Hingham and Weymouth

ACEC acreages above are based on MassGIS calculations and may differ from numbers originally presented in designation documents and other ACEC publications due to improvements in accuracy of GIS data and boundary clarifications. Listed acreages have been rounded to the nearest 50 or 10 depending on whether boundary clarification has occurred. For more information please see, http://www.mass.gov/dcr/stewardship/acec/aboutMaps.htm.

Towns with ACECs within their Boundaries — November 2010

TOWN	ACEC
Ashby	Squannassit
Ayer	Petapawag
	Squannassit
Barnstable	Sandy Neck Barrier Beach System
Bolton	Central Nashua River Valley
Boston	Rumney Marshes
	Fowl Meadow and Ponkapoag Bog
	Neponset River Estuary
Bourne	Pocasset River
	Bourne Back River
	Herring River Watershed
Braintree	Cranberry Brook Watershed
Brewster	Pleasant Bay
	Inner Cape Cod Bay
Bridgewater	Hockomock Swamp
Canton	Fowl Meadow and Ponkapoag Bog
Chatham	Pleasant Bay
Cohasset	Weir River
Dalton	Hinsdale Flats Watershed
Dedham	Fowl Meadow and Ponkapoag Bog
Dighton	Three Mile River Watershed
Dunstable	Petapawag
Eastham	Inner Cape Cod Bay
	Wellfleet Harbor
Easton	Canoe River Aquifer
	Hockomock Swamp
Egremont	Karner Brook Watershed
Essex	Great Marsh
Falmouth	Waquoit Bay
Foxborough	Canoe River Aquifer
Gloucester	Great Marsh
Grafton	Miscoe-Warren-Whitehall Watersheds
Groton	Petapawag
	Squannassit
Harvard	Central Nashua River Valley
	Squannassit
Harwich	Pleasant Bay
Hingham	Weir River
	Weymouth Back River
Hinsdale	Hinsdale Flats Watershed
Holbrook	Cranberry Brook Watershed
Hopkinton	Miscoe-Warren-Whitehall Watersheds
	Cedar Swamp
Hull	Weir River
Ipswich	Great Marsh
Lancaster	Central Nashua River Valley
	Squannassit
Lee	Kampoosa Bog Drainage Basin
	Upper Housatonic River
Lenox	Upper Housatonic River
Leominster	Central Nashua River Valley
Lunenburg	Squannassit
Lynn	Rumney Marshes
Mansfield	Canoe River Aquifer
Mashpee	Waquoit Bay
Melrose	Golden Hills
Milton	Fowl Meadow and Ponkapoag Bog
	Neponset River Estuary
Mt. Washington	Karner Brook Watershed
	Schenob Brook
Newbury	Great Marsh
Norton	Hockomock Swamp
	Canoe River Aquifer
	Three Mile River Watershed
Norwood	Fowl Meadow and Ponkapoag Bog
Orleans	Inner Cape Cod Bay
	Pleasant Bay
Pepperell	Petapawag
	Squannassit
Peru	Hinsdale Flats Watershed
Pittsfield	Upper Housatonic River
Plymouth	Herring River Watershed
	Ellisville Harbor
Quincy	Neponset River Estuary
Randolph	Fowl Meadow and Ponkapoag Bog
Raynham	Hockomock Swamp
Revere	Rumney Marshes
Rowley	Great Marsh
Sandwich	Sandy Neck Barrier Beach System
Saugus	Rumney Marshes
	Golden Hills
Sharon	Canoe River Aquifer
	Fowl Meadow and Ponkapoag Bog
Sheffield	Schenob Brook
Shirley	Squannassit
Stockbridge	Kampoosa Bog Drainage Basin
Taunton	Hockomock Swamp
	Canoe River Aquifer
	Three Mile River Watershed
Truro	Wellfleet Harbor
Townsend	Squannassit
Tyngsborough	Petapawag
Upton	Miscoe-Warren-Whitehall Watersheds
Wakefield	Golden Hills
Washington	Hinsdale Flats Watershed
	Upper Housatonic River
Wellfleet	Wellfleet Harbor
W Bridgewater	Hockomock Swamp
Westborough	Cedar Swamp
Westwood	Fowl Meadow and Ponkapoag Bog
Weymouth	Weymouth Back River
Winthrop	Rumney Marshes

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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

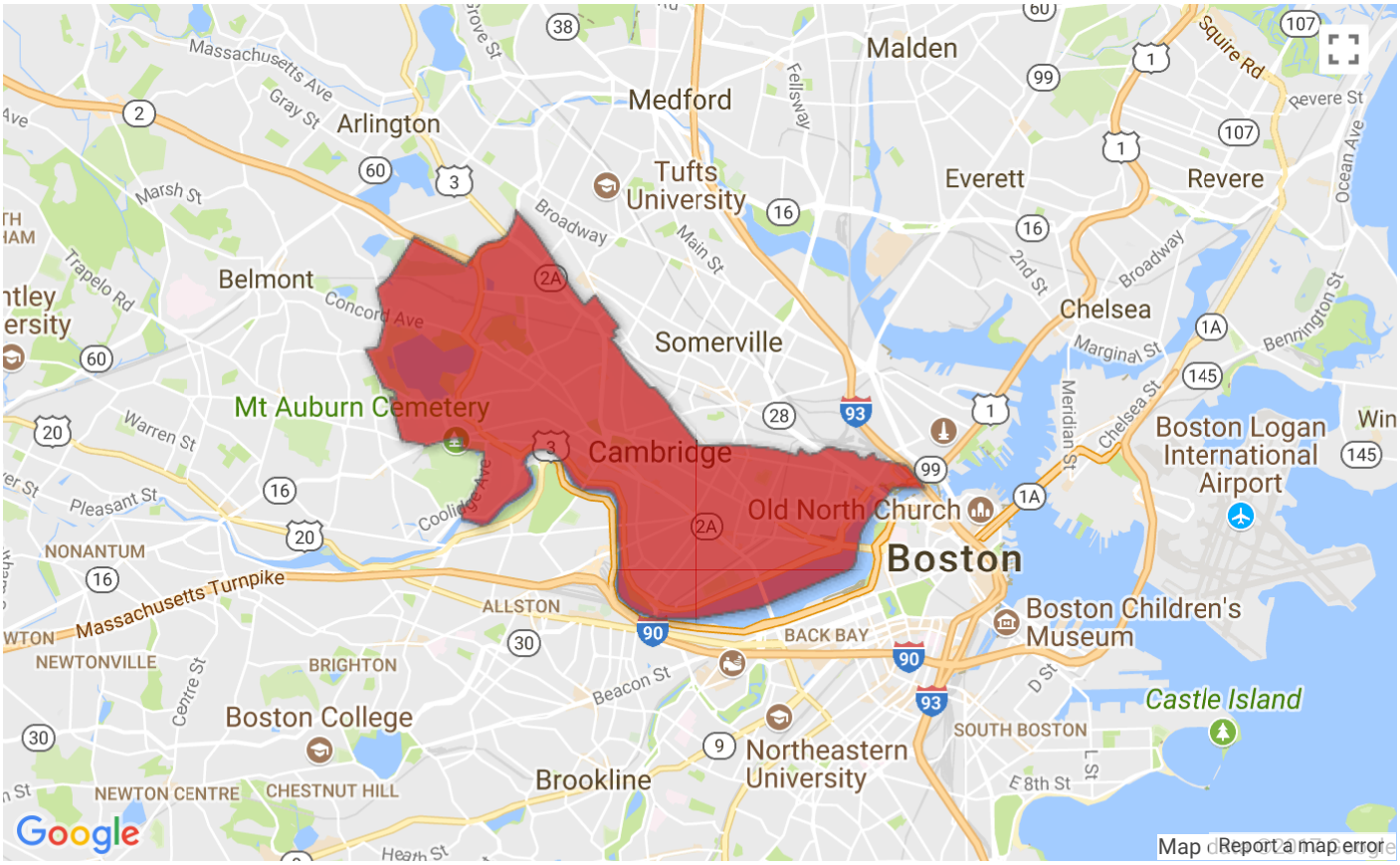
-Eastern cougar and gray wolf are considered extirpated in Massachusetts.
-Endangered gray wolves are not known to be present in Massachusetts, but dispersing individuals from source populations in Canada may occur statewide.
-Critical habitat for the Northern Red-bellied Cooter is present in Plymouth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

Updated 02/05/2016

The Natural Heritage & Endangered Species Program maintains a list of all documented MESA-listed species observations in the Commonwealth. Please select a town if you would like to see a table showing which listed species have been observed in that town. The selected town will also be highlighted on the map. Alternatively you can specify either the Common Name or Scientific Name of a species to see it's distribution on the map and table showing the towns it has been observed in. Clicking on a column header in the table will sort the column. Clicking again on the same column heading will reverse the sort order.

The Town List and Species Viewer will be updated at regular intervals as new data is accepted and entered into the NHESP database.

Town: CAMBRIDGE or Species (Common Name): or Species (Scientific Name):



Showing 1 to 10 of 24 entries Search:

First Previous 1 2 3 Next Last

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Most Recent Obs
CAMBRIDGE	Amphibian	Ambystoma laterale	Blue-spotted Salamander	SC	1917
CAMBRIDGE	Bird	Botaurus lentiginosus	American Bittern	E	1906
CAMBRIDGE	Vascular Plant	Carex gracilescens	Slender Woodland Sedge	E	1891
CAMBRIDGE	Beetle	Cicindela duodecimguttata	Twelve-spotted Tiger Beetle	SC	1932
CAMBRIDGE	Bird	Cistothorus platensis	Sedge Wren	E	1840
CAMBRIDGE	Vascular Plant	Cyperus engelmannii	Engelmann's Umbrella-sedge	T	2008

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Most Recent Obs
CAMBRIDGE	Butterfly/Moth	Eacles imperialis	Imperial Moth	T	Historic
CAMBRIDGE	Bird	Falco peregrinus	Peregrine Falcon	T	2016
CAMBRIDGE	Bird	Gallinula chloropus	Common Moorhen	SC	1890
CAMBRIDGE	Vascular Plant	Gentiana andrewsii	Andrews' Bottle Gentian	E	2015

Show 10 ▼ entries

Show Additional Info

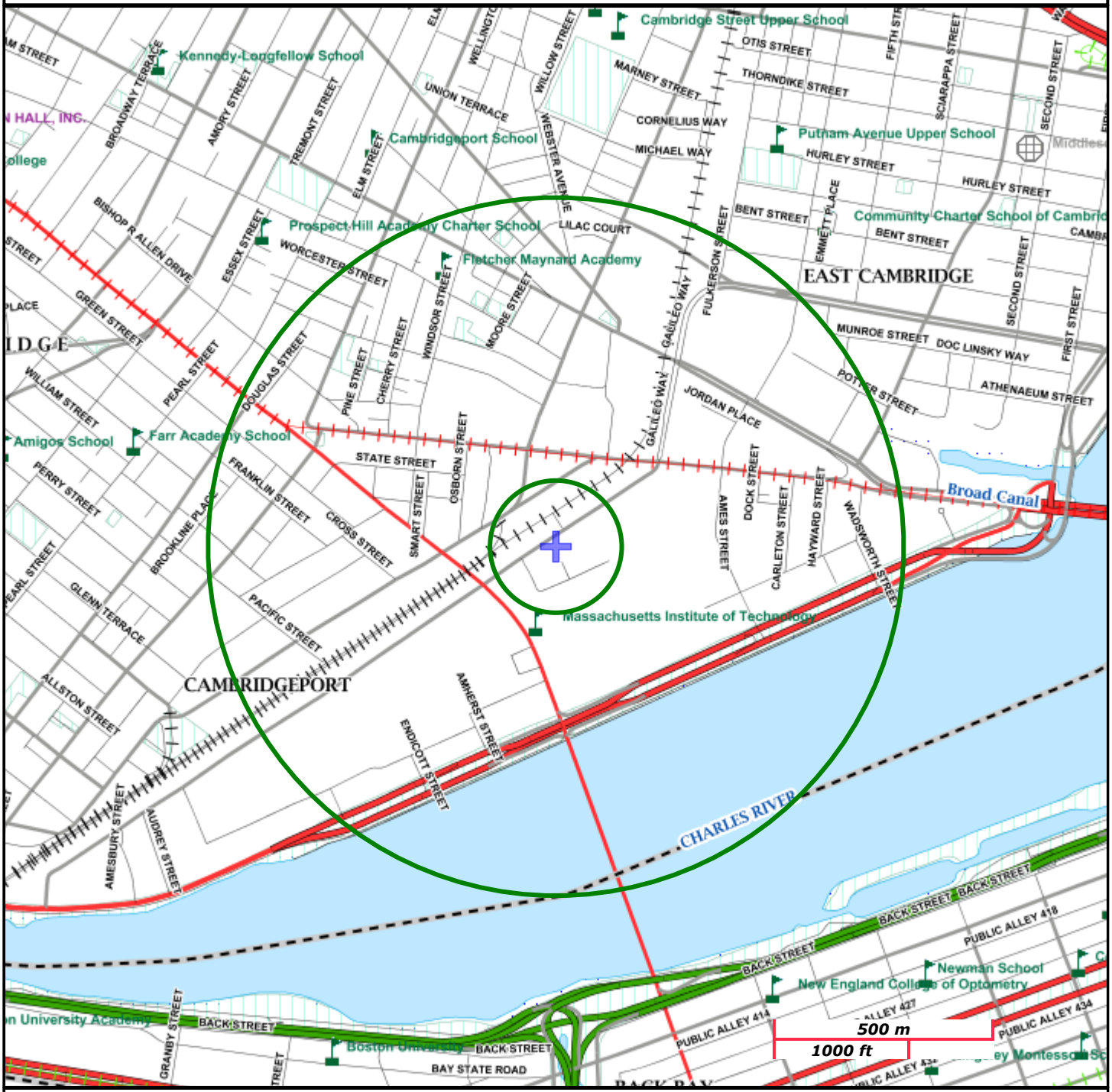
MassDEP - Bureau of Waste Site Cleanup

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

Site Information:
MIT.NANO PROJECT
60 VASSAR STREET CAMBRIDGE, MA
3-000032224
NAD83 UTM Meters:
4691975mN , 327658mE (Zone: 19)
September 8, 2017

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

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



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

APPENDIX H

Laboratory Data Reports

ANALYTICAL REPORT

Lab Number:	L1718924
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Sandhya Potana
Phone:	(617) 886-7484
Project Name:	MIT CUP
Project Number:	129504-003
Report Date:	06/13/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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

Project Name: MIT CUP
Project Number: 129504-003

Lab Number: L1718924
Report Date: 06/13/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1718924-01	2017-0606-CHARLES RIVER	WATER	CAMBRIDGE, MA	06/07/17 06:30	06/07/17

Project Name: MIT CUP
Project Number: 129504-003

Lab Number: L1718924
Report Date: 06/13/17

Case Narrative

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

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

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

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

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

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

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

Authorized Signature:  Amita Naik

Title: Technical Director/Representative Date: 06/13/17

METALS

Project Name: MIT CUP
Project Number: 129504-003
Lab Number: L1718924
Report Date: 06/13/17

SAMPLE RESULTS

Lab ID: L1718924-01
Client ID: 2017-0606-CHARLES RIVER
Sample Location: CAMBRIDGE, MA
Matrix: Water
Date Collected: 06/07/17 06:30
Date Received: 06/07/17
Field Prep: Not Specified

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	06/09/17 11:50	06/10/17 12:35	EPA 3005A	3,200.8	BV
Arsenic, Total	ND		mg/l	0.00100	--	1	06/09/17 11:50	06/10/17 12:35	EPA 3005A	3,200.8	BV
Cadmium, Total	ND		mg/l	0.00020	--	1	06/09/17 11:50	06/10/17 12:35	EPA 3005A	3,200.8	BV
Chromium, Total	ND		mg/l	0.00100	--	1	06/09/17 11:50	06/10/17 12:35	EPA 3005A	3,200.8	BV
Copper, Total	0.00465		mg/l	0.00100	--	1	06/09/17 11:50	06/10/17 12:35	EPA 3005A	3,200.8	BV
Iron, Total	0.795		mg/l	0.050	--	1	06/09/17 11:50	06/12/17 18:29	EPA 3005A	19,200.7	PS
Lead, Total	0.00356		mg/l	0.00050	--	1	06/09/17 11:50	06/10/17 12:35	EPA 3005A	3,200.8	BV
Mercury, Total	ND		mg/l	0.00020	--	1	06/08/17 10:29	06/09/17 20:03	EPA 245.1	3,245.1	EA
Nickel, Total	ND		mg/l	0.00200	--	1	06/09/17 11:50	06/10/17 12:35	EPA 3005A	3,200.8	BV
Selenium, Total	ND		mg/l	0.00500	--	1	06/09/17 11:50	06/10/17 12:35	EPA 3005A	3,200.8	BV
Silver, Total	ND		mg/l	0.00040	--	1	06/09/17 11:50	06/10/17 12:35	EPA 3005A	3,200.8	BV
Zinc, Total	0.01131		mg/l	0.01000	--	1	06/09/17 11:50	06/10/17 12:35	EPA 3005A	3,200.8	BV
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	81.5		mg/l	0.660	NA	1	06/09/17 11:50	06/12/17 18:29	EPA 3005A	19,200.7	PS
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		06/10/17 12:35	NA	107,-	

Project Name: MIT CUP
Project Number: 129504-003
Lab Number: L1718924
Report Date: 06/13/17

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: WG1011071-1										
Mercury, Total	ND		mg/l	0.00020	--	1	06/08/17 10:29	06/09/17 19:05	3,245.1	EA

Prep Information

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1011560-1										
Iron, Total	ND		mg/l	0.050	--	1	06/09/17 11:50	06/12/17 18:00	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1011560-1										
Hardness	ND		mg/l	0.660	NA	1	06/09/17 11:50	06/12/17 18:00	19,200.7	PS

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: WG1011562-1										
Antimony, Total	ND		mg/l	0.00400	--	1	06/09/17 11:50	06/10/17 12:10	3,200.8	BV
Arsenic, Total	ND		mg/l	0.00100	--	1	06/09/17 11:50	06/10/17 12:10	3,200.8	BV
Cadmium, Total	ND		mg/l	0.00020	--	1	06/09/17 11:50	06/10/17 12:10	3,200.8	BV
Chromium, Total	ND		mg/l	0.00100	--	1	06/09/17 11:50	06/10/17 12:10	3,200.8	BV
Copper, Total	ND		mg/l	0.00100	--	1	06/09/17 11:50	06/10/17 12:10	3,200.8	BV
Lead, Total	ND		mg/l	0.00050	--	1	06/09/17 11:50	06/10/17 12:10	3,200.8	BV

Project Name: MIT CUP
Project Number: 129504-003
Lab Number: L1718924
Report Date: 06/13/17

Method Blank Analysis
Batch Quality Control

Nickel, Total	ND	mg/l	0.00200	--	1	06/09/17 11:50	06/10/17 12:10	3,200.8	BV
Selenium, Total	ND	mg/l	0.00500	--	1	06/09/17 11:50	06/10/17 12:10	3,200.8	BV
Silver, Total	ND	mg/l	0.00040	--	1	06/09/17 11:50	06/10/17 12:10	3,200.8	BV
Zinc, Total	ND	mg/l	0.01000	--	1	06/09/17 11:50	06/10/17 12:10	3,200.8	BV

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT CUP

Project Number: 129504-003

Lab Number: L1718924

Report Date: 06/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1011071-2								
Mercury, Total	110		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1011560-2								
Iron, Total	104		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1011560-2								
Hardness	100		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1011562-2								
Antimony, Total	100		-		85-115	-		
Arsenic, Total	98		-		85-115	-		
Cadmium, Total	105		-		85-115	-		
Chromium, Total	99		-		85-115	-		
Copper, Total	101		-		85-115	-		
Lead, Total	101		-		85-115	-		
Nickel, Total	100		-		85-115	-		
Selenium, Total	96		-		85-115	-		
Silver, Total	98		-		85-115	-		
Zinc, Total	99		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: MIT CUP
Project Number: 129504-003

Lab Number: L1718924
Report Date: 06/13/17

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: WG1011071-3 QC Sample: L1718184-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00529	106		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1011071-5 QC Sample: L1718560-02 Client ID: MS Sample												
Mercury, Total	0.00155	0.005	0.00639	97		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1011560-3 QC Sample: L1718924-01 Client ID: 2017-0606-CHARLES RIVER												
Iron, Total	0.795	1	1.83	104		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1011560-3 QC Sample: L1718924-01 Client ID: 2017-0606-CHARLES RIVER												
Hardness	81.5	66.2	143	93		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1011560-7 QC Sample: L1718700-01 Client ID: MS Sample												
Iron, Total	0.531	1	1.54	101		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1011560-7 QC Sample: L1718700-01 Client ID: MS Sample												
Hardness	68.2	66.2	128	90		-	-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: MIT CUP
Project Number: 129504-003

Lab Number: L1718924
Report Date: 06/13/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1011562-3 QC Sample: L1718924-01 Client ID: 2017-0606-CHARLES RIVER									
Antimony, Total	ND	0.5	0.5534	111	-	-	70-130	-	20
Arsenic, Total	ND	0.12	0.1202	100	-	-	70-130	-	20
Cadmium, Total	ND	0.051	0.05370	105	-	-	70-130	-	20
Chromium, Total	ND	0.2	0.1917	96	-	-	70-130	-	20
Copper, Total	0.00465	0.25	0.2506	98	-	-	70-130	-	20
Lead, Total	0.00356	0.51	0.5109	99	-	-	70-130	-	20
Nickel, Total	ND	0.5	0.4890	98	-	-	70-130	-	20
Selenium, Total	ND	0.12	0.1221	102	-	-	70-130	-	20
Silver, Total	ND	0.05	0.04893	98	-	-	70-130	-	20
Zinc, Total	0.01131	0.5	0.4984	97	-	-	70-130	-	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: MIT CUP
Project Number: 129504-003

Lab Number: L1718924
Report Date: 06/13/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1011071-4 QC Sample: L1718184-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1011071-6 QC Sample: L1718560-02 Client ID: DUP Sample						
Mercury, Total	0.00155	0.00117	mg/l	**28**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1011560-4 QC Sample: L1718924-01 Client ID: 2017-0606-CHARLES RIVER						
Iron, Total	0.795	0.786	mg/l	1		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1011560-4 QC Sample: L1718924-01 Client ID: 2017-0606-CHARLES RIVER						
Hardness	81.5	81.3	mg/l	0		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1011562-4 QC Sample: L1718924-01 Client ID: 2017-0606-CHARLES RIVER						
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	0.00101	mg/l	NC		20
Copper, Total	0.00465	0.00462	mg/l	1		20
Lead, Total	0.00356	0.00361	mg/l	2		20
Nickel, Total	ND	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.01131	0.01148	mg/l	1		20

INORGANICS
&
MISCELLANEOUS

Project Name: MIT CUP
Project Number: 129504-003

Lab Number: L1718924
Report Date: 06/13/17

SAMPLE RESULTS

Lab ID: L1718924-01
Client ID: 2017-0606-CHARLES RIVER
Sample Location: CAMBRIDGE, MA
Matrix: Water

Date Collected: 06/07/17 06:30
Date Received: 06/07/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Nitrogen, Ammonia	0.241		mg/l	0.075	--	1	06/08/17 14:41	06/08/17 23:17	121,4500NH3-BH	AT
Chromium, Hexavalent	ND		mg/l	0.010	--	1	06/08/17 01:15	06/08/17 01:51	1,7196A	KA

Project Name: MIT CUP
Project Number: 129504-003
Lab Number: L1718924
Report Date: 06/13/17

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: WG1010945-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	06/08/17 01:15	06/08/17 01:49	1,7196A	KA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1011131-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	06/08/17 14:41	06/08/17 23:12	121,4500NH3-BH	AT

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT CUP

Project Number: 129504-003

Lab Number: L1718924

Report Date: 06/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1010945-2								
Chromium, Hexavalent	96		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1011131-2								
Nitrogen, Ammonia	94		-		80-120	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: MIT CUP
Project Number: 129504-003

Lab Number: L1718924
Report Date: 06/13/17

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: WG1010945-4 QC Sample: L1718924-01 Client ID: 2017-0606-CHARLES RIVER												
Chromium, Hexavalent	ND	0.1	0.095	95		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1011131-4 QC Sample: L1718654-03 Client ID: MS Sample												
Nitrogen, Ammonia	ND	4	3.66	92		-	-		80-120	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: MIT CUP
Project Number: 129504-003

Lab Number: L1718924
Report Date: 06/13/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1010945-3 QC Sample: L1718924-01 Client ID: 2017-0606-CHARLES RIVER						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1011131-3 QC Sample: L1718654-03 Client ID: DUP Sample						
Nitrogen, Ammonia	ND	ND	mg/l	NC		20

Project Name: MIT CUP
Project Number: 129504-003

Lab Number: L1718924
Report Date: 06/13/17

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(*)
L1718924-01A	Plastic 250ml HNO3 preserved	A	<2	<2	3.5	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),HARDU(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L1718924-01B	Plastic 250ml HNO3 preserved	A	<2	<2	3.5	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),HARDU(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L1718924-01C	Plastic 500ml H2SO4 preserved	A	<2	<2	3.5	Y	Absent		NH3-4500(28)
L1718924-01D	Plastic 950ml unpreserved	A	7	7	3.5	Y	Absent		HEXCR-7196(1)

*Values in parentheses indicate holding time in days

Project Name:	MIT CUP	**Lab Number:**	L1718924
Project Number:	129504-003	**Report Date:**	06/13/17

GLOSSARY

Acronyms

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

Footnotes

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

Terms

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

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

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

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

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: Data Usability Report

Project Name:	MIT CUP	**Lab Number:**	L1718924
Project Number:	129504-003	**Report Date:**	06/13/17

Data Qualifiers

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

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

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

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

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

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

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

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

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

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

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

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

Report Format: Data Usability Report

Project Name:	MIT CUP	**Lab Number:**	L1718924
Project Number:	129504-003	**Report Date:**	06/13/17

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

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

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

107 Alpha Analytical - In-house calculation method.

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

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
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: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

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

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

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

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: 6/7/17

ALPHA Job #: L1718924

Project Information
- Project Name: MIT CUP
- Project Location: Cambridge, MA
- Project #: 129504-003
- (Use Project name as Project #) ☐
- Project Manager: Sandhya Potana
- ALPHAQuote #:

Turn-Around Time
- Standard ☑ Due Date:
- Rush (only if pre approved) ☐ # of Days:

H&A Information
- H&A Client: MIT
- H&A Address: 465 Medford St, Boston, MA 0212-1400
- H&A Phone: 617-886-7400
- H&A Fax:
- H&A Email: lhoward@haleyaldrich.com

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:

1. **Please sample per EPA Approved 2017 RGP Permit methods**
2. Antimony, Arsenic, Cadmium, Chromium, Chromium III, Copper, Iron, Lead, Mercury, Nickle, Selenium, Silver, Zinc

*Sample labels say 6/6 - correct date is 6/7

Please specify Metals or TAL.

Antimony, Arsenic, Cadmium, Chromium, Chromium III, Copper, Iron, Lead, Mercury, Nickle, Selenium, Silver, Zinc

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. Total Metals (Note 2)	2. Hardness	3. Ammonia	4. Hex Cr+	5. pH	Total Bottles	Sample Specific Comments
18924-01	2017-0606-CHARLES RIVER	6/6/2017, 6/7/17	6:30	AQ	LRH	X	X	X	X			Temp - 15.4 °C
												pH - 7.66

Container Type										
Preservative										

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
	6/7/17	M. [illegible]	6/7/17 16:30
M. [illegible]	6/7/17 16:30	[illegible] MAL	6/7/17 1640
[illegible]	6/7/17 1850	[illegible]	6/7/17 1850

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)

ANALYTICAL REPORT

Lab Number:	L1728927
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Todd Butler
Phone:	(617) 886-7424
Project Name:	MIT NANO
Project Number:	36514-706
Report Date:	09/01/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1728927-01	HA14-B8-20170817	WATER	CAMBRIDGE, MA	08/17/17 12:20	08/17/17

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

Case Narrative

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

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

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

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

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

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

Project Name:	MIT NANO	**Lab Number:**	L1728927
Project Number:	36514-706	**Report Date:**	09/01/17

Case Narrative (continued)

Report Submission

September 01, 2017: This final report includes the results of all requested analyses.

August 23, 2017: 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.

Semivolatile Organics

The WG1033153-2 LCS recovery, associated with L1728927-01 (HA14-B8-20170817), is below the acceptance criteria for benzoic acid (0%); however, it has been identified as a "difficult" analyte. The results of the associated sample are reported.

Total Metals

The WG1033208-2 LCS recovery, associated with L1728927-01 (HA14-B8-20170817), is above the acceptance criteria for zinc (119%); however, the associated sample is non-detect to the RL 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: Kara Lindquist

Title: Technical Director/Representative Date: 09/01/17

ORGANICS

VOLATILES

Project Name: MIT NANO
Project Number: 36514-706
Lab Number: L1728927
Report Date: 09/01/17

SAMPLE RESULTS

Lab ID: L1728927-01
Client ID: HA14-B8-20170817
Sample Location: CAMBRIDGE, MA

Date Collected: 08/17/17 12:20
Date Received: 08/17/17
Field Prep: Not Specified

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/22/17 08:13
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
1,2-Dichloroethene, Total	1.0		ug/l	0.50	--	1
Trichloroethene	0.85		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1

Project Name: MIT NANO **Lab Number:** L1728927

Project Number: 36514-706 **Report Date:** 09/01/17

SAMPLE RESULTS

Lab ID: L1728927-01 Date Collected: 08/17/17 12:20

Client ID: HA14-B8-20170817 Date Received: 08/17/17

Sample Location: CAMBRIDGE, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	1.0		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,4-Dichlorobutane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	9.4		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
Vinyl acetate	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Ethyl methacrylate	ND		ug/l	5.0	--	1
Acrylonitrile	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: MIT NANO
Project Number: 36514-706
Lab Number: L1728927
Report Date: 09/01/17

SAMPLE RESULTS

Lab ID: L1728927-01
Client ID: HA14-B8-20170817
Sample Location: CAMBRIDGE, MA
Date Collected: 08/17/17 12:20
Date Received: 08/17/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	128		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	104		70-130

Project Name: MIT NANO
Project Number: 36514-706
Lab Number: L1728927
Report Date: 09/01/17

SAMPLE RESULTS

Lab ID: L1728927-01
Client ID: HA14-B8-20170817
Sample Location: CAMBRIDGE, MA

Date Collected: 08/17/17 12:20
Date Received: 08/17/17
Field Prep: Not Specified

Matrix: Water
Analytical Method: 1,8260C-SIM(M)
Analytical Date: 08/22/17 08:13
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM - Westborough Lab						
1,4-Dioxane	ND		ug/l	3.0	--	1

Project Name: MIT NANO
Project Number: 36514-706
Lab Number: L1728927
Report Date: 09/01/17

SAMPLE RESULTS

Lab ID: L1728927-01
Client ID: HA14-B8-20170817
Sample Location: CAMBRIDGE, MA

Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 08/22/17 13:46
Analyst: NS

Date Collected: 08/17/17 12:20
Date Received: 08/17/17
Field Prep: Not Specified
Extraction Method: EPA 504.1
Extraction Date: 08/22/17 12:05

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

Project Name: MIT NANO
Project Number: 36514-706
Lab Number: L1728927
Report Date: 09/01/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C-SIM(M)
Analytical Date: 08/22/17 06:57
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1034156-5					
1,4-Dioxane	ND		ug/l	3.0	--

Project Name: MIT NANO
Project Number: 36514-706
Lab Number: L1728927
Report Date: 09/01/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/22/17 06:57
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1034158-5					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
1,2-Dichloroethene, Total	ND		ug/l	0.50	--
Trichloroethene	ND		ug/l	0.50	--

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/22/17 06:57
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1034158-5					
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,4-Dichlorobutane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
Vinyl acetate	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Ethyl methacrylate	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.5	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--

Project Name: MIT NANO
Project Number: 36514-706
Lab Number: L1728927
Report Date: 09/01/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/22/17 06:57
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1034158-5					
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	129		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	103		70-130

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 08/22/17 12:58
Analyst: NS

Extraction Method: EPA 504.1
Extraction Date: 08/22/17 12:05

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG1034264-1						
1,2-Dibromoethane	ND		ug/l	0.010	--	A
1,2-Dibromo-3-chloropropane	ND		ug/l	0.010	--	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT NANO

Project Number: 36514-706

Lab Number: L1728927

Report Date: 09/01/17

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: WG1034156-3 WG1034156-4								
1,4-Dioxane	95		100		70-130	5		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

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: WG1034158-3 WG1034158-4								
Methylene chloride	110		97		70-130	13		20
1,1-Dichloroethane	120		110		70-130	9		20
Chloroform	100		95		70-130	5		20
Carbon tetrachloride	92		87		63-132	6		20
1,2-Dichloropropane	110		100		70-130	10		20
Dibromochloromethane	97		89		63-130	9		20
1,1,2-Trichloroethane	110		100		70-130	10		20
Tetrachloroethene	88		84		70-130	5		20
Chlorobenzene	91		84		75-130	8		25
Trichlorofluoromethane	110		99		62-150	11		20
1,2-Dichloroethane	110		97		70-130	13		20
1,1,1-Trichloroethane	98		89		67-130	10		20
Bromodichloromethane	98		88		67-130	11		20
trans-1,3-Dichloropropene	110		98		70-130	12		20
cis-1,3-Dichloropropene	95		86		70-130	10		20
1,1-Dichloropropene	95		86		70-130	10		20
Bromoform	94		84		54-136	11		20
1,1,2,2-Tetrachloroethane	110		100		67-130	10		20
Benzene	100		93		70-130	7		25
Toluene	100		94		70-130	6		25
Ethylbenzene	98		92		70-130	6		20
Chloromethane	**140**	Q	130		64-130	7		20
Bromomethane	58		67		39-139	14		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT NANO

Project Number: 36514-706

Lab Number: L1728927

Report Date: 09/01/17

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: WG1034158-3 WG1034158-4								
Vinyl chloride	110		100		55-140	10		20
Chloroethane	110		96		55-138	14		20
1,1-Dichloroethene	90		82		61-145	9		25
Trichloroethene	99		88		70-130	12		25
1,2-Dichlorobenzene	95		88		70-130	8		20
1,3-Dichlorobenzene	97		89		70-130	9		20
1,4-Dichlorobenzene	93		87		70-130	7		20
Methyl tert butyl ether	93		82		63-130	13		20
p/m-Xylene	95		90		70-130	5		20
o-Xylene	95		85		70-130	11		20
cis-1,2-Dichloroethene	94		86		70-130	9		20
Dibromomethane	100		90		70-130	11		20
1,4-Dichlorobutane	130		120		70-130	8		20
1,2,3-Trichloropropane	110		97		64-130	13		20
Styrene	100		90		70-130	11		20
Dichlorodifluoromethane	100		100		36-147	0		20
Acetone	130		120		58-148	8		20
Carbon disulfide	100		92		51-130	8		20
2-Butanone	**140**	Q	130		63-138	7		20
Vinyl acetate	**140**	Q	130		70-130	7		20
4-Methyl-2-pentanone	100		92		59-130	8		20
2-Hexanone	120		100		57-130	18		20
Ethyl methacrylate	87		81		70-130	7		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

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: WG1034158-3 WG1034158-4								
Acrylonitrile	130		120		70-130	8		20
Bromochloromethane	94		90		70-130	4		20
Tetrahydrofuran	**150**	Q	130		58-130	14		20
2,2-Dichloropropane	110		97		63-133	13		20
1,2-Dibromoethane	98		88		70-130	11		20
1,3-Dichloropropane	110		99		70-130	11		20
1,1,1,2-Tetrachloroethane	110		100		64-130	10		20
Bromobenzene	91		84		70-130	8		20
n-Butylbenzene	100		99		53-136	1		20
sec-Butylbenzene	98		91		70-130	7		20
tert-Butylbenzene	89		84		70-130	6		20
o-Chlorotoluene	100		94		70-130	6		20
p-Chlorotoluene	100		92		70-130	8		20
1,2-Dibromo-3-chloropropane	91		82		41-144	10		20
Hexachlorobutadiene	91		88		63-130	3		20
Isopropylbenzene	90		84		70-130	7		20
p-Isopropyltoluene	90		85		70-130	6		20
Naphthalene	84		78		70-130	7		20
n-Propylbenzene	100		92		69-130	8		20
1,2,3-Trichlorobenzene	89		83		70-130	7		20
1,2,4-Trichlorobenzene	88		82		70-130	7		20
1,3,5-Trimethylbenzene	95		88		64-130	8		20
1,2,4-Trimethylbenzene	95		87		70-130	9		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT NANO

Project Number: 36514-706

Lab Number: L1728927

Report Date: 09/01/17

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: WG1034158-3 WG1034158-4								
trans-1,4-Dichloro-2-butene	**140**	Q	120		70-130	15		20
Ethyl ether	91		81		59-134	12		20
Tert-Butyl Alcohol	112		100		70-130	11		20
Tertiary-Amyl Methyl Ether	96		88		66-130	9		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	119		122		70-130
Toluene-d8	105		104		70-130
4-Bromofluorobenzene	89		91		70-130
Dibromofluoromethane	101		100		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT NANO

Project Number: 36514-706

Lab Number: L1728927

Report Date: 09/01/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 Batch: WG1034264-2									
1,2-Dibromoethane	106		-		70-130	-			A
1,2-Dibromo-3-chloropropane	97		-		70-130	-			A

Matrix Spike Analysis

Batch Quality Control

Project Name: MIT NANO

Project Number: 36514-706

Lab Number: L1728927

Report Date: 09/01/17

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: WG1034264-3		QC Sample: L1728927-01		Client ID: HA14-B8-20170817							
1,2-Dibromoethane	ND	0.254	0.288	113		-	-		65-135	-		20	A
1,2-Dibromo-3-chloropropane	ND	0.254	0.271	106		-	-		65-135	-		20	A

SEMIVOLATILES

Project Name: MIT NANO
Project Number: 36514-706
Lab Number: L1728927
Report Date: 09/01/17

SAMPLE RESULTS

Lab ID: L1728927-01
Client ID: HA14-B8-20170817
Sample Location: CAMBRIDGE, MA

Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 08/22/17 22:38
Analyst: CB

Date Collected: 08/17/17 12:20
Date Received: 08/17/17
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 08/18/17 07:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzidine	ND		ug/l	20	--	1
1,2,4-Trichlorobenzene	ND		ug/l	4.9	--	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--	1
1,2-Dichlorobenzene	ND		ug/l	2.0	--	1
1,3-Dichlorobenzene	ND		ug/l	2.0	--	1
1,4-Dichlorobenzene	ND		ug/l	2.0	--	1
3,3'-Dichlorobenzidine	ND		ug/l	4.9	--	1
2,4-Dinitrotoluene	ND		ug/l	4.9	--	1
2,6-Dinitrotoluene	ND		ug/l	4.9	--	1
Azobenzene	ND		ug/l	2.0	--	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	--	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--	1
Bis(2-chloroethoxy)methane	ND		ug/l	4.9	--	1
Hexachlorocyclopentadiene	ND		ug/l	20	--	1
Isophorone	ND		ug/l	4.9	--	1
Nitrobenzene	ND		ug/l	2.0	--	1
NDPA/DPA	ND		ug/l	2.0	--	1
n-Nitrosodi-n-propylamine	ND		ug/l	4.9	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	2.9	--	1
Butyl benzyl phthalate	ND		ug/l	4.9	--	1
Di-n-butylphthalate	ND		ug/l	4.9	--	1
Di-n-octylphthalate	ND		ug/l	4.9	--	1
Diethyl phthalate	ND		ug/l	4.9	--	1
Dimethyl phthalate	ND		ug/l	4.9	--	1
Biphenyl	ND		ug/l	2.0	--	1
Aniline	ND		ug/l	2.0	--	1
4-Chloroaniline	ND		ug/l	4.9	--	1
2-Nitroaniline	ND		ug/l	4.9	--	1
3-Nitroaniline	ND		ug/l	4.9	--	1

Project Name: MIT NANO
Project Number: 36514-706
Lab Number: L1728927
Report Date: 09/01/17

SAMPLE RESULTS

Lab ID: L1728927-01
Client ID: HA14-B8-20170817
Sample Location: CAMBRIDGE, MA
Date Collected: 08/17/17 12:20
Date Received: 08/17/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
4-Nitroaniline	ND		ug/l	4.9	--	1
Dibenzofuran	ND		ug/l	2.0	--	1
n-Nitrosodimethylamine	ND		ug/l	2.0	--	1
2,4,6-Trichlorophenol	ND		ug/l	4.9	--	1
p-Chloro-m-cresol	ND		ug/l	2.0	--	1
2-Chlorophenol	ND		ug/l	2.0	--	1
2,4-Dichlorophenol	ND		ug/l	4.9	--	1
2,4-Dimethylphenol	ND		ug/l	4.9	--	1
2-Nitrophenol	ND		ug/l	9.8	--	1
4-Nitrophenol	ND		ug/l	9.8	--	1
2,4-Dinitrophenol	ND		ug/l	20	--	1
4,6-Dinitro-o-cresol	ND		ug/l	9.8	--	1
Phenol	ND		ug/l	4.9	--	1
2-Methylphenol	ND		ug/l	4.9	--	1
3-Methylphenol/4-Methylphenol	ND		ug/l	4.9	--	1
2,4,5-Trichlorophenol	ND		ug/l	4.9	--	1
Benzoic Acid	ND		ug/l	49	--	1
Benzyl Alcohol	ND		ug/l	2.0	--	1
Carbazole	ND		ug/l	2.0	--	1
Pyridine	ND		ug/l	3.4	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	41		21-120
Phenol-d6	29		10-120
Nitrobenzene-d5	65		23-120
2-Fluorobiphenyl	63		15-120
2,4,6-Tribromophenol	59		10-120
4-Terphenyl-d14	67		41-149

Project Name: MIT NANO
Project Number: 36514-706
Lab Number: L1728927
Report Date: 09/01/17

SAMPLE RESULTS

Lab ID: L1728927-01
Client ID: HA14-B8-20170817
Sample Location: CAMBRIDGE, MA

Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 08/19/17 12:39
Analyst: KL

Date Collected: 08/17/17 12:20
Date Received: 08/17/17
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 08/18/17 07:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	--	1
2-Chloronaphthalene	ND		ug/l	0.20	--	1
Fluoranthene	ND		ug/l	0.10	--	1
Hexachlorobutadiene	ND		ug/l	0.49	--	1
Naphthalene	ND		ug/l	0.10	--	1
Benzo(a)anthracene	ND		ug/l	0.10	--	1
Benzo(a)pyrene	ND		ug/l	0.10	--	1
Benzo(b)fluoranthene	ND		ug/l	0.10	--	1
Benzo(k)fluoranthene	ND		ug/l	0.10	--	1
Chrysene	ND		ug/l	0.10	--	1
Acenaphthylene	ND		ug/l	0.10	--	1
Anthracene	ND		ug/l	0.10	--	1
Benzo(ghi)perylene	ND		ug/l	0.10	--	1
Fluorene	ND		ug/l	0.10	--	1
Phenanthrene	ND		ug/l	0.10	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	--	1
Pyrene	ND		ug/l	0.10	--	1
1-Methylnaphthalene	ND		ug/l	0.10	--	1
2-Methylnaphthalene	ND		ug/l	0.10	--	1
Pentachlorophenol	ND		ug/l	0.78	--	1
Hexachlorobenzene	ND		ug/l	0.78	--	1
Hexachloroethane	ND		ug/l	0.78	--	1

Project Name: MIT NANO
Lab Number: L1728927
Project Number: 36514-706
Report Date: 09/01/17

SAMPLE RESULTS

Lab ID: L1728927-01
Client ID: HA14-B8-20170817
Sample Location: CAMBRIDGE, MA
Date Collected: 08/17/17 12:20
Date Received: 08/17/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	36		21-120
Phenol-d6	26		10-120
Nitrobenzene-d5	59		23-120
2-Fluorobiphenyl	53		15-120
2,4,6-Tribromophenol	53		10-120
4-Terphenyl-d14	52		41-149

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/18/17 13:32
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 08/18/17 06:50

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1033152-1					
Acenaphthene	ND		ug/l	0.10	--
2-Chloronaphthalene	ND		ug/l	0.20	--
Fluoranthene	ND		ug/l	0.10	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	0.10	--
Benzo(a)anthracene	ND		ug/l	0.10	--
Benzo(a)pyrene	ND		ug/l	0.10	--
Benzo(b)fluoranthene	ND		ug/l	0.10	--
Benzo(k)fluoranthene	ND		ug/l	0.10	--
Chrysene	ND		ug/l	0.10	--
Acenaphthylene	ND		ug/l	0.10	--
Anthracene	ND		ug/l	0.10	--
Benzo(ghi)perylene	ND		ug/l	0.10	--
Fluorene	ND		ug/l	0.10	--
Phenanthrene	ND		ug/l	0.10	--
Dibenzo(a,h)anthracene	ND		ug/l	0.10	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	--
Pyrene	ND		ug/l	0.10	--
1-Methylnaphthalene	ND		ug/l	0.10	--
2-Methylnaphthalene	ND		ug/l	0.10	--
Pentachlorophenol	ND		ug/l	0.80	--
Hexachlorobenzene	ND		ug/l	0.80	--
Hexachloroethane	ND		ug/l	0.80	--

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 08/18/17 13:32
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 08/18/17 06:50

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1033152-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	36		21-120
Phenol-d6	24		10-120
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	53		15-120
2,4,6-Tribromophenol	61		10-120
4-Terphenyl-d14	46		41-149

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/20/17 13:02
Analyst: KR

Extraction Method: EPA 3510C
Extraction Date: 08/18/17 07:16

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1033153-1					
Acenaphthene	ND		ug/l	2.0	--
Benzidine	ND		ug/l	20	--
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--
Hexachlorobenzene	ND		ug/l	2.0	--
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--
2-Chloronaphthalene	ND		ug/l	2.0	--
1,2-Dichlorobenzene	ND		ug/l	2.0	--
1,3-Dichlorobenzene	ND		ug/l	2.0	--
1,4-Dichlorobenzene	ND		ug/l	2.0	--
3,3'-Dichlorobenzidine	ND		ug/l	5.0	--
2,4-Dinitrotoluene	ND		ug/l	5.0	--
2,6-Dinitrotoluene	ND		ug/l	5.0	--
Azobenzene	ND		ug/l	2.0	--
Fluoranthene	ND		ug/l	2.0	--
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	--
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--
Hexachlorobutadiene	ND		ug/l	2.0	--
Hexachlorocyclopentadiene	ND		ug/l	20	--
Hexachloroethane	ND		ug/l	2.0	--
Isophorone	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.0	--
Nitrobenzene	ND		ug/l	2.0	--
NDPA/DPA	ND		ug/l	2.0	--
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	--
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/20/17 13:02
Analyst: KR

Extraction Method: EPA 3510C
Extraction Date: 08/18/17 07:16

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1033153-1					
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--
Benzo(a)anthracene	ND		ug/l	2.0	--
Benzo(a)pyrene	ND		ug/l	2.0	--
Benzo(b)fluoranthene	ND		ug/l	2.0	--
Benzo(k)fluoranthene	ND		ug/l	2.0	--
Chrysene	ND		ug/l	2.0	--
Acenaphthylene	ND		ug/l	2.0	--
Anthracene	ND		ug/l	2.0	--
Benzo(ghi)perylene	ND		ug/l	2.0	--
Fluorene	ND		ug/l	2.0	--
Phenanthrene	ND		ug/l	2.0	--
Dibenzo(a,h)anthracene	ND		ug/l	2.0	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	--
Pyrene	ND		ug/l	2.0	--
Biphenyl	ND		ug/l	2.0	--
Aniline	ND		ug/l	2.0	--
4-Chloroaniline	ND		ug/l	5.0	--
1-Methylnaphthalene	ND		ug/l	2.0	--
2-Nitroaniline	ND		ug/l	5.0	--
3-Nitroaniline	ND		ug/l	5.0	--
4-Nitroaniline	ND		ug/l	5.0	--
Dibenzofuran	ND		ug/l	2.0	--
2-Methylnaphthalene	ND		ug/l	2.0	--
n-Nitrosodimethylamine	ND		ug/l	2.0	--
2,4,6-Trichlorophenol	ND		ug/l	5.0	--
p-Chloro-m-cresol	ND		ug/l	2.0	--
2-Chlorophenol	ND		ug/l	2.0	--

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/20/17 13:02
Analyst: KR

Extraction Method: EPA 3510C
Extraction Date: 08/18/17 07:16

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1033153-1					
2,4-Dichlorophenol	ND		ug/l	5.0	--
2,4-Dimethylphenol	ND		ug/l	5.0	--
2-Nitrophenol	ND		ug/l	10	--
4-Nitrophenol	ND		ug/l	10	--
2,4-Dinitrophenol	ND		ug/l	20	--
4,6-Dinitro-o-cresol	ND		ug/l	10	--
Pentachlorophenol	ND		ug/l	10	--
Phenol	ND		ug/l	5.0	--
2-Methylphenol	ND		ug/l	5.0	--
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--
2,4,5-Trichlorophenol	ND		ug/l	5.0	--
Benzoic Acid	ND		ug/l	50	--
Benzyl Alcohol	ND		ug/l	2.0	--
Carbazole	ND		ug/l	2.0	--
Pyridine	ND		ug/l	3.5	--
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/l		

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/20/17 13:02
Analyst: KR

Extraction Method: EPA 3510C
Extraction Date: 08/18/17 07:16

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1033153-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	46		21-120
Phenol-d6	32		10-120
Nitrobenzene-d5	63		23-120
2-Fluorobiphenyl	83		15-120
2,4,6-Tribromophenol	87		10-120
4-Terphenyl-d14	85		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

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: WG1033152-2 WG1033152-3								
Acenaphthene	64		68		37-111	6		40
2-Chloronaphthalene	66		69		40-140	4		40
Fluoranthene	60		63		40-140	5		40
Hexachlorobutadiene	61		64		40-140	5		40
Naphthalene	61		63		40-140	3		40
Benzo(a)anthracene	61		67		40-140	9		40
Benzo(a)pyrene	60		66		40-140	10		40
Benzo(b)fluoranthene	62		70		40-140	12		40
Benzo(k)fluoranthene	64		71		40-140	10		40
Chrysene	64		69		40-140	8		40
Acenaphthylene	64		67		40-140	5		40
Anthracene	64		69		40-140	8		40
Benzo(ghi)perylene	58		64		40-140	10		40
Fluorene	66		70		40-140	6		40
Phenanthrene	62		67		40-140	8		40
Dibenzo(a,h)anthracene	54		58		40-140	7		40
Indeno(1,2,3-cd)pyrene	55		60		40-140	9		40
Pyrene	58		62		26-127	7		40
1-Methylnaphthalene	63		66		40-140	5		40
2-Methylnaphthalene	63		67		40-140	6		40
Pentachlorophenol	82		84		9-103	2		40
Hexachlorobenzene	67		73		40-140	9		40
Hexachloroethane	60		60		40-140	0		40

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT NANO

Project Number: 36514-706

Lab Number: L1728927

Report Date: 09/01/17

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: WG1033152-2 WG1033152-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	42		44		21-120
Phenol-d6	29		31		10-120
Nitrobenzene-d5	66		65		23-120
2-Fluorobiphenyl	63		66		15-120
2,4,6-Tribromophenol	72		77		10-120
4-Terphenyl-d14	54		57		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

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: WG1033153-2 WG1033153-3								
Acenaphthene	74		71		37-111	4		30
Benzidine	35		22		10-75	**46**	Q	30
1,2,4-Trichlorobenzene	76		69		39-98	10		30
Hexachlorobenzene	91		81		40-140	12		30
Bis(2-chloroethyl)ether	76		68		40-140	11		30
2-Chloronaphthalene	69		73		40-140	6		30
1,2-Dichlorobenzene	71		65		40-140	9		30
1,3-Dichlorobenzene	69		63		40-140	9		30
1,4-Dichlorobenzene	70		64		36-97	9		30
3,3'-Dichlorobenzidine	58		56		40-140	4		30
2,4-Dinitrotoluene	79		75		48-143	5		30
2,6-Dinitrotoluene	72		76		40-140	5		30
Azobenzene	77		74		40-140	4		30
Fluoranthene	80		74		40-140	8		30
4-Chlorophenyl phenyl ether	78		77		40-140	1		30
4-Bromophenyl phenyl ether	90		77		40-140	16		30
Bis(2-chloroisopropyl)ether	69		60		40-140	14		30
Bis(2-chloroethoxy)methane	80		74		40-140	8		30
Hexachlorobutadiene	78		72		40-140	8		30
Hexachlorocyclopentadiene	71		71		40-140	0		30
Hexachloroethane	70		70		40-140	0		30
Isophorone	72		70		40-140	3		30
Naphthalene	73		69		40-140	6		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

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: WG1033153-2 WG1033153-3								
Nitrobenzene	80		74		40-140	8		30
NDPA/DPA	76		73		40-140	4		30
n-Nitrosodi-n-propylamine	77		74		29-132	4		30
Bis(2-ethylhexyl)phthalate	75		75		40-140	0		30
Butyl benzyl phthalate	81		74		40-140	9		30
Di-n-butylphthalate	77		74		40-140	4		30
Di-n-octylphthalate	68		77		40-140	12		30
Diethyl phthalate	77		76		40-140	1		30
Dimethyl phthalate	66		69		40-140	4		30
Benzo(a)anthracene	76		74		40-140	3		30
Benzo(a)pyrene	73		95		40-140	26		30
Benzo(b)fluoranthene	73		92		40-140	23		30
Benzo(k)fluoranthene	72		89		40-140	21		30
Chrysene	76		74		40-140	3		30
Acenaphthylene	71		76		45-123	7		30
Anthracene	76		72		40-140	5		30
Benzo(ghi)perylene	79		74		40-140	7		30
Fluorene	75		75		40-140	0		30
Phenanthrene	75		73		40-140	3		30
Dibenzo(a,h)anthracene	80		75		40-140	6		30
Indeno(1,2,3-cd)pyrene	79		74		40-140	7		30
Pyrene	80		72		26-127	11		30
Biphenyl	71		75		40-140	5		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

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: WG1033153-2 WG1033153-3								
Aniline	54		48		40-140	12		30
4-Chloroaniline	70		66		40-140	6		30
1-Methylnaphthalene	79		74		41-103	7		30
2-Nitroaniline	72		76		52-143	5		30
3-Nitroaniline	64		63		25-145	2		30
4-Nitroaniline	76		70		51-143	8		30
Dibenzofuran	76		71		40-140	7		30
2-Methylnaphthalene	75		71		40-140	5		30
n-Nitrosodimethylamine	40		37		22-74	8		30
2,4,6-Trichlorophenol	75		79		30-130	5		30
p-Chloro-m-cresol	83		78		23-97	6		30
2-Chlorophenol	75		71		27-123	5		30
2,4-Dichlorophenol	84		76		30-130	10		30
2,4-Dimethylphenol	89		82		30-130	8		30
2-Nitrophenol	85		75		30-130	13		30
4-Nitrophenol	53		51		10-80	4		30
2,4-Dinitrophenol	77		76		20-130	1		30
4,6-Dinitro-o-cresol	83		79		20-164	5		30
Pentachlorophenol	98		84		9-103	15		30
Phenol	40		39		12-110	3		30
2-Methylphenol	74		65		30-130	13		30
3-Methylphenol/4-Methylphenol	66		63		30-130	5		30
2,4,5-Trichlorophenol	77		83		30-130	8		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT NANO

Project Number: 36514-706

Lab Number: L1728927

Report Date: 09/01/17

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: WG1033153-2 WG1033153-3								
Benzoic Acid	**0**	Q	27		10-164	NC		30
Benzyl Alcohol	70		66		26-116	6		30
Carbazole	76		72		55-144	5		30
Pyridine	32		24		10-66	29		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	55		52		21-120
Phenol-d6	36		35		10-120
Nitrobenzene-d5	74		72		23-120
2-Fluorobiphenyl	69		74		15-120
2,4,6-Tribromophenol	89		87		10-120
4-Terphenyl-d14	83		73		41-149

PCBS

Project Name: MIT NANO
Project Number: 36514-706
Lab Number: L1728927
Report Date: 09/01/17

SAMPLE RESULTS

Lab ID: L1728927-01
Client ID: HA14-B8-20170817
Sample Location: CAMBRIDGE, MA

Matrix: Water
Analytical Method: 5,608
Analytical Date: 08/22/17 02:04
Analyst: HT

Date Collected: 08/17/17 12:20
Date Received: 08/17/17
Field Prep: Not Specified
Extraction Method: EPA 608
Extraction Date: 08/18/17 16:16
Cleanup Method: EPA 3665A
Cleanup Date: 08/19/17
Cleanup Method: EPA 3660B
Cleanup Date: 08/19/17

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	72		30-150	A
Decachlorobiphenyl	65		30-150	A

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,608
Analytical Date: 08/18/17 09:13
Analyst: JW

Extraction Method: EPA 608
Extraction Date: 08/17/17 21:04
Cleanup Method: EPA 3665A
Cleanup Date: 08/18/17
Cleanup Method: EPA 3660B
Cleanup Date: 08/18/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG1033055-1						
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	54		30-150	A
Decachlorobiphenyl	53		30-150	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT NANO

Project Number: 36514-706

Lab Number: L1728927

Report Date: 09/01/17

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: WG1033055-2									
Aroclor 1016	77		-		30-150	-		30	A
Aroclor 1260	89		-		30-150	-		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	60				30-150	A
Decachlorobiphenyl	59				30-150	A

Matrix Spike Analysis

Batch Quality Control

Project Name: MIT NANO

Project Number: 36514-706

Lab Number: L1728927

Report Date: 09/01/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1033055-3 QC Sample: L1700008-75 Client ID: MS Sample													
Aroclor 1016	ND	3.12	2.25	72		-	-		40-126	-		30	A
Aroclor 1260	ND	3.12	2.28	73		-	-		40-127	-		30	A

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	57				30-150	A
Decachlorobiphenyl	48				30-150	A

Lab Duplicate Analysis
Batch Quality Control

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits	
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1033055-4 QC Sample: L1700008-75 Client ID: DUP Sample							
Aroclor 1016	ND	ND	ug/l	NC		30	A
Aroclor 1221	ND	ND	ug/l	NC		30	A
Aroclor 1232	ND	ND	ug/l	NC		30	A
Aroclor 1242	ND	ND	ug/l	NC		30	A
Aroclor 1248	ND	ND	ug/l	NC		30	A
Aroclor 1254	ND	ND	ug/l	NC		30	A
Aroclor 1260	ND	ND	ug/l	NC		30	A

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64		56		30-150	A
Decachlorobiphenyl	65		52		30-150	A

METALS

Project Name: MIT NANO
Project Number: 36514-706
Lab Number: L1728927
Report Date: 09/01/17

SAMPLE RESULTS

Lab ID: L1728927-01
Client ID: HA14-B8-20170817
Sample Location: CAMBRIDGE, MA
Matrix: Water
Date Collected: 08/17/17 12:20
Date Received: 08/17/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	08/18/17 10:00	08/22/17 12:26	EPA 3005A	3,200.8	AM
Arsenic, Total	0.01194		mg/l	0.00100	--	1	08/18/17 10:00	08/22/17 12:26	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	08/18/17 10:00	08/22/17 12:26	EPA 3005A	3,200.8	AM
Chromium, Total	0.00137		mg/l	0.00100	--	1	08/18/17 10:00	08/22/17 12:26	EPA 3005A	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	08/18/17 10:00	08/22/17 12:26	EPA 3005A	3,200.8	AM
Iron, Total	0.859		mg/l	0.050	--	1	08/18/17 10:00	08/21/17 21:37	EPA 3005A	19,200.7	AB
Lead, Total	ND		mg/l	0.00050	--	1	08/18/17 10:00	08/22/17 12:26	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	08/18/17 11:57	08/21/17 12:56	EPA 245.1	3,245.1	MG
Nickel, Total	ND		mg/l	0.00200	--	1	08/18/17 10:00	08/22/17 12:26	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	08/18/17 10:00	08/22/17 12:26	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	08/18/17 10:00	08/22/17 12:26	EPA 3005A	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	08/18/17 10:00	08/22/17 12:26	EPA 3005A	3,200.8	AM
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	247		mg/l	0.660	NA	1	08/18/17 10:00	08/21/17 21:37	EPA 3005A	19,200.7	AB
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		08/22/17 12:26	NA	107,-	

Project Name: MIT NANO
Project Number: 36514-706
Lab Number: L1728927
Report Date: 09/01/17

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: WG1033208-1										
Antimony, Total	ND		mg/l	0.00400	--	1	08/18/17 10:00	08/22/17 12:03	3,200.8	AM
Arsenic, Total	ND		mg/l	0.0010	--	1	08/18/17 10:00	08/22/17 12:03	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	08/18/17 10:00	08/22/17 12:03	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	08/18/17 10:00	08/22/17 12:03	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	08/18/17 10:00	08/22/17 12:03	3,200.8	AM
Lead, Total	ND		mg/l	0.00050	--	1	08/18/17 10:00	08/22/17 12:03	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	--	1	08/18/17 10:00	08/22/17 12:03	3,200.8	AM
Selenium, Total	ND		mg/l	0.0050	--	1	08/18/17 10:00	08/22/17 12:03	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	08/18/17 10:00	08/22/17 12:03	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	08/18/17 10:00	08/22/17 12:03	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1033288-1										
Mercury, Total	ND		mg/l	0.0002	--	1	08/18/17 11:57	08/21/17 12:47	3,245.1	MG

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: WG1033296-1										
Iron, Total	ND		mg/l	0.050	--	1	08/18/17 10:00	08/21/17 21:13	19,200.7	AB

Prep Information

Digestion Method: EPA 3005A

Project Name: MIT NANO
Project Number: 36514-706
Lab Number: L1728927
Report Date: 09/01/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1033296-1										
Hardness	ND		mg/l	0.660	NA	1	08/18/17 10:00	08/21/17 21:13	19,200.7	AB

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT NANO

Project Number: 36514-706

Lab Number: L1728927

Report Date: 09/01/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1033208-2								
Antimony, Total	115		-		85-115	-		
Arsenic, Total	108		-		85-115	-		
Cadmium, Total	111		-		85-115	-		
Chromium, Total	115		-		85-115	-		
Copper, Total	114		-		85-115	-		
Lead, Total	112		-		85-115	-		
Nickel, Total	114		-		85-115	-		
Selenium, Total	110		-		85-115	-		
Silver, Total	112		-		85-115	-		
Zinc, Total	**119**	Q	-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1033288-2								
Mercury, Total	99		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1033296-2								
Iron, Total	113		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1033296-2								
Hardness	90		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

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: WG1033208-3 QC Sample: L1728927-01 Client ID: HA14-B8-20170817												
Antimony, Total	ND	0.5	0.6023	120		-	-		70-130	-		20
Arsenic, Total	0.01194	0.12	0.1511	116		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.06154	121		-	-		70-130	-		20
Chromium, Total	0.00137	0.2	0.2326	116		-	-		70-130	-		20
Copper, Total	ND	0.25	0.2904	116		-	-		70-130	-		20
Lead, Total	ND	0.51	0.5911	116		-	-		70-130	-		20
Nickel, Total	ND	0.5	0.5642	113		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1352	113		-	-		70-130	-		20
Silver, Total	ND	0.05	0.05745	115		-	-		70-130	-		20
Zinc, Total	ND	0.5	0.5976	120		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1033288-3 QC Sample: L1728637-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.0046	92		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1033288-5 QC Sample: L1728927-01 Client ID: HA14-B8-20170817												
Mercury, Total	ND	0.005	0.0042	84		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1033296-3 QC Sample: L1728927-01 Client ID: HA14-B8-20170817												
Iron, Total	0.859	1	2.08	122		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1033296-3 QC Sample: L1728927-01 Client ID: HA14-B8-20170817												
Hardness	247	66.2	317	106		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1033208-4 QC Sample: L1728927-01 Client ID: HA14-B8-20170817						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	0.01194	0.0142	mg/l	17		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	0.00137	0.00146	mg/l	7		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 QC Batch ID: WG1033288-4 QC Sample: L1728637-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1033288-6 QC Sample: L1728927-01 Client ID: HA14-B8-20170817						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1033296-4 QC Sample: L1728927-01 Client ID: HA14-B8-20170817						
Iron, Total	0.859	0.942	mg/l	9		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1033296-4 QC Sample: L1728927-01 Client ID: HA14-B8-20170817						
Hardness	247	272	mg/l	10		20

INORGANICS
&
MISCELLANEOUS

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

SAMPLE RESULTS

Lab ID: L1728927-01
Client ID: HA14-B8-20170817
Sample Location: CAMBRIDGE, MA
Matrix: Water

Date Collected: 08/17/17 12:20
Date Received: 08/17/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
SALINITY	ND		SU	2.0	--	1	-	08/22/17 18:27	121,2520B	AS
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	08/18/17 06:25	121,2540D	JT
Cyanide, Total	ND		mg/l	0.005	--	1	08/18/17 12:55	08/18/17 16:19	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	08/18/17 01:07	121,4500CL-D	VB
Nitrogen, Ammonia	0.858		mg/l	0.075	--	1	08/18/17 13:00	08/20/17 14:48	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.40	--	1.1	08/18/17 18:30	08/18/17 22:30	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	08/18/17 10:49	08/18/17 16:17	4,420.1	AW
Chromium, Hexavalent	ND		mg/l	0.010	--	1	08/17/17 22:15	08/17/17 22:27	1,7196A	ML
Anions by Ion Chromatography - Westborough Lab										
Chloride	461.		mg/l	12.5	--	25	-	08/21/17 20:05	44,300.0	JC

Project Name: MIT NANO
Project Number: 36514-706
Lab Number: L1728927
Report Date: 09/01/17

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: WG1033068-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	08/17/17 22:15	08/17/17 22:26	1,7196A	ML
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1033129-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	08/18/17 06:25	121,2540D	JT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1033159-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	08/18/17 01:07	121,4500CL-D	VB
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1033267-1										
Phenolics, Total	ND		mg/l	0.030	--	1	08/18/17 10:49	08/18/17 16:13	4,420.1	AW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1033275-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	08/18/17 13:00	08/20/17 14:38	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1033285-1										
Cyanide, Total	ND		mg/l	0.005	--	1	08/18/17 12:55	08/18/17 15:53	121,4500CN-CE	LH
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1033418-1										
TPH, SGT-HEM	ND		mg/l	4.00	--	1	08/18/17 18:30	08/18/17 22:30	74,1664A	ML
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1034056-1										
Chloride	ND		mg/l	0.500	--	1	-	08/21/17 18:17	44,300.0	JC

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1033068-2								
Chromium, Hexavalent	98		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1033159-2								
Chlorine, Total Residual	109		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1033267-2								
Phenolics, Total	89		-		82-111	-		12
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1033275-2								
Nitrogen, Ammonia	90		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1033285-2								
Cyanide, Total	101		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1033418-2								
TPH	88		-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1034056-2								
Chloride	101		-		90-110	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT NANO

Project Number: 36514-706

Lab Number: L1728927

Report Date: 09/01/17

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1034405-1					
SALINITY	96	-		-	

Matrix Spike Analysis
Batch Quality Control

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

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: WG1033068-4 QC Sample: L1728927-01 Client ID: HA14-B8-20170817												
Chromium, Hexavalent	ND	0.1	0.099	99		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1033159-4 QC Sample: L1728927-01 Client ID: HA14-B8-20170817												
Chlorine, Total Residual	ND	0.248	0.24	97		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1033267-4 QC Sample: L1700008-74 Client ID: MS Sample												
Phenolics, Total	ND	0.8	0.86	108		-	-		77-124	-		12
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1033275-4 QC Sample: L1728856-02 Client ID: MS Sample												
Nitrogen, Ammonia	0.248	4	4.02	94		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1033285-4 QC Sample: L1728821-02 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.195	98		-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1033418-4 QC Sample: L1728821-02 Client ID: MS Sample												
TPH	ND	20.8	18.6	90		-	-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1034056-3 QC Sample: L1729218-01 Client ID: MS Sample												
Chloride	82.1	100	187	103		-	-		90-110	-		18

Lab Duplicate Analysis
Batch Quality Control

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1033068-3 QC Sample: L1728927-01 Client ID: HA14-B8-20170817						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1033129-2 QC Sample: L1728739-01 Client ID: DUP Sample						
Solids, Total Suspended	90	92	mg/l	2		29
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1033159-3 QC Sample: L1728927-01 Client ID: HA14-B8-20170817						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1033267-3 QC Sample: L1700008-74 Client ID: DUP Sample						
Phenolics, Total	ND	ND	mg/l	NC		12
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1033275-3 QC Sample: L1728856-02 Client ID: DUP Sample						
Nitrogen, Ammonia	0.248	0.177	mg/l	**33**	Q	20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1033285-3 QC Sample: L1728821-01 Client ID: DUP Sample						
Cyanide, Total	ND	ND	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1033418-3 QC Sample: L1728821-01 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1034056-4 QC Sample: L1729218-01 Client ID: DUP Sample						
Chloride	82.1	82.0	mg/l	0		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1034405-2 QC Sample: L1728927-01 Client ID: HA14-B8-20170817						
SALINITY	ND	ND	SU	NC		

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

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(*)
L1728927-01A	Vial HCl preserved	A	NA		5.0	Y	Absent		8260-SIM(14),8260(14)
L1728927-01B	Vial HCl preserved	A	NA		5.0	Y	Absent		8260-SIM(14),8260(14)
L1728927-01C	Vial HCl preserved	A	NA		5.0	Y	Absent		8260-SIM(14),8260(14)
L1728927-01D	Vial Na2S2O3 preserved	A	NA		5.0	Y	Absent		504(14)
L1728927-01E	Vial Na2S2O3 preserved	A	NA		5.0	Y	Absent		504(14)
L1728927-01F	Vial HCl preserved	A	NA		5.0	Y	Absent		SUB-ETHANOL(14)
L1728927-01G	Vial HCl preserved	A	NA		5.0	Y	Absent		SUB-ETHANOL(14)
L1728927-01H	Vial HCl preserved	A	NA		5.0	Y	Absent		SUB-ETHANOL(14)
L1728927-01I	Plastic 950ml unpreserved	A	7	7	5.0	Y	Absent		TSS-2540(7)
L1728927-01J	Plastic 950ml unpreserved	A	7	7	5.0	Y	Absent		CL-300(28),HEXCR-7196(1),TRC-4500(1)
L1728927-01K	Amber 1000ml H2SO4 preserved	A	<2	<2	5.0	Y	Absent		TPHENOL-420(28)
L1728927-01L	Amber 1000ml HCl preserved	A	NA		5.0	Y	Absent		TPH-1664(28)
L1728927-01M	Amber 1000ml HCl preserved	A	NA		5.0	Y	Absent		TPH-1664(28)
L1728927-01N	Plastic 250ml NaOH preserved	A	>12	>12	5.0	Y	Absent		TCN-4500(14)
L1728927-01O	Amber 250ml unpreserved	A	7	7	5.0	Y	Absent		SALINITY(28)
L1728927-01P	Plastic 500ml H2SO4 preserved	A	<2	<2	5.0	Y	Absent		NH3-4500(28)
L1728927-01Q	Amber 1000ml unpreserved	A	7	7	5.0	Y	Absent		8270TCL(7),8270TCL-SIM(7)
L1728927-01R	Amber 1000ml unpreserved	A	7	7	5.0	Y	Absent		8270TCL(7),8270TCL-SIM(7)
L1728927-01S	Amber 1000ml Na2S2O3	A	7	7	5.0	Y	Absent		PCB-608(7)
L1728927-01T	Amber 1000ml Na2S2O3	A	7	7	5.0	Y	Absent		PCB-608(7)
L1728927-01U	Plastic 250ml HNO3 preserved	A	<2	<2	5.0	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),HARDU(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)

*Values in parentheses indicate holding time in days

Project Name: MIT NANO
Project Number: 36514-706

Lab Number: L1728927
Report Date: 09/01/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1728927-01V	Plastic 250ml HNO3 preserved	A	<2	<2	5.0	Y	Absent		HOLD-METAL-DISSOLVED(180)

*Values in parentheses indicate holding time in days

Project Name:	MIT NANO	**Lab Number:**	L1728927
Project Number:	36514-706	**Report Date:**	09/01/17

GLOSSARY

Acronyms

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

Footnotes

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

Terms

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

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

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

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

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: Data Usability Report

Project Name:	MIT NANO	**Lab Number:**	L1728927
Project Number:	36514-706	**Report Date:**	09/01/17

Data Qualifiers

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

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

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

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

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

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

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

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

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

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

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

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

Report Format: Data Usability Report

Project Name:	MIT NANO	**Lab Number:**	L1728927
Project Number:	36514-706	**Report Date:**	09/01/17

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

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

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

5 Methods for the Organic Chemical Analysis of Municipal and Industrial Wastewater. Appendix A, Part 136, 40 CFR (Code of Federal Regulations).

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.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
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: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

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

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

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

ALPHA ANALYTICAL

CHAIN OF CUSTODY

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 ___ of ___

Date Rec'd in Lab: 8/17/17

ALPHA Job #: L1728927

Project Information

Project Name: MIT. Nano
Project Location: Cambridge,MA
Project #: 36514-706
(Use Project name as Project #) ☐
Project Manager: ~~M. Balfe and Lisa Turturro~~ T. Butler
ALPHAQuote #: 3600

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 - RCS-1
MA NPDES RGP

Note: Select State from menu & identify criteria.

Disposal Site Information

Please identify below location of applicable disposal facilities.

Disposal Facility:
☐ NJ ☐ NY
☐ Other:

H&A Information

H&A Client: MIT
H&A Address: 465 Medford Street
Boston, MA 02129
H&A Phone: 617-886-7400
H&A Fax:
H&A Email: Tbutler@haleyaldrich.com

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Hold Dissovled Metals pending results *
1,* Total Metals RGP, Hardness
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,* Metals (RGP), Hardness	Dissolved Metals *	TSS, TRC, CL, Hex Cr	8270, 8270-SIM	TPH, 504, TCN	8260, 8260-SIM	Ethanol, T Phenol	PCB, NH3, 420, Salinity	Sample Specific Comments
28927-01	HA14-B8-20170817	08/17/17	1220	Water	CPS	X	X	X	X	X	X	X	X	

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

Container Type								
Preservative								

Relinquished By:	Date/Time	Received By:	Date/Time
Cody Smith Cody CS	08/17/17	M. Catto	8/17/17 1613
M. Catto	8/17/17 1613	[signature] AAL	8/17/17 1630
[signature]	8/17/17 1808	[signature]	8/17/17 1808

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)

SUB UPS:LANCASTER/EUROFINS, PA

CHAIN OF CUSTODY

PAGE 1 OF 1

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

Date Rec'd in Lab:

ALPHA Job #: L1728927

Client Information

Client: Alpha Analytical Lab
Address: 8 Walkup Drive
Westborough, Ma 01581
Phone: 508-898-9220
Fax:
Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name:
Project Location: MA
Project #:
Project Manager: Gina Hall
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
NPDES RGP	

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:
Please reference Alpha Job #L1728927 on this report.

ANALYSIS

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Ethanol												Sample Specific Comments	TOTAL # BOTTLES
	HA14-B8-20170817	8/17/17	12:20	WATER		X													3

Container Type	Vial		-	-	-	-	-	-	-	-	-	-	
Preservative	HCL		-	-	-	-	-	-	-	-	-	-	

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time

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

FORM NO: 01-01(I)
(rev. 30-JUL-07)

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Alpha Analytical, Inc.
145 Flanders Road
Westborough MA 01581

Report Date: August 31, 2017

Project: L1728927

Account #: 09847
Group Number: 1840677
PO Number: L1728927
State of Sample Origin: MA

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To	Alpha Analytical, Inc.	Attn: Gina Hall
Electronic Copy To	Alpha Analytical, Inc.	Attn: Sublab Contact

Respectfully Submitted,

Bonnie Stadelmann

Bonnie Stadelmann
Senior Project Manager

(312) 590-3133

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2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

SAMPLE INFORMATION

Client Sample Description	Collection Information	ELLE#
HA14-B8-20170817 Water Sample	08/17/2017 12:20	9168018

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

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Analysis Report

Sample Description: HA14-B8-20170817 Water Sample
L1728927

ELLE Sample # WW 9168018
ELLE Group # 1840677
Account # 09847

Project Name: L1728927

Collected: 08/17/2017 12:20

Submitted: 08/22/2017 08:20
Reported: 08/31/2017 16:52

Alpha Analytical, Inc.
145 Flanders Road
Westborough MA 01581

HA14B

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**EPA 1671 Rev A**		**ug/l**	**ug/l**	
02366	ethanol	64-17-5	N.D. D2	2,000	1

Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02366	EPA 1671 VOCs	EPA 1671 Rev A	1	172400024A	08/28/2017 22:07	Tyler O Griffin	1

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Analysis Report

Quality Control Summary

Client Name: Alpha Analytical, Inc. Group Number: 1840677
Reported: 08/31/2017 16:52

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	LOQ
	ug/l	ug/l
Batch number: 172400024A	Sample number(s): 9168018	
ethanol	N.D.	2,000

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	ug/l	ug/l	ug/l	ug/l					
Batch number: 172400024A	Sample number(s): 9168018								
ethanol	4010	3746.38	4010	3972.08	93	99	70-132	6	30

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc	MS Spike Added	MS Conc	MSD Spike Added	MSD Conc	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
	ug/l	ug/l	ug/l	ug/l	ug/l					
Batch number: 172400024A	Sample number(s): 9168018 UNSPK: P165710									
ethanol	N.D.	4010	3993.47	4010	3983.94	100	99	70-132	0	30

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report. For dual column analyses, the surrogate (at least one surrogate for multi-surrogate tests) must be within the acceptance limits on at least one of the two columns.

Analysis Name: EPA 1671 VOCs
Batch number: 172400024A

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

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Analysis Report

Quality Control Summary

Client Name: Alpha Analytical, Inc. Group Number: 1840677
Reported: 08/31/2017 16:52

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report. For dual column analyses, the surrogate (at least one surrogate for multi-surrogate tests) must be within the acceptance limits on at least one of the two columns.

Analysis Name: EPA 1671 VOCs
Batch number: 172400024A

	Amyl Alcohol-D1	Amyl Alcohol-D2
9168018	100	110
Blank	106	104
LCS	105	101
LCSD	105	102
MS	100	105
MSD	95	104
Limits:	52-144	52-144

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

SUB UPS:LANCASTER/EUROFINS, PA 1M 9847/184677/9148018

CHAIN OF CUSTODY

PAGE 1 OF 1

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

Date Rec'd in Lab:

ALPHA Job #: L1728927

Client Information

Client: Alpha Analytical Lab
Address: 8 Walkup Drive
Westborough, Ma 01581
Phone: 508-898-9220
Fax:
Email: subreports@alphalab.com
☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name:
Project Location: MA
Project #:
Project Manager: Gina Hall
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Report Information Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
NPDES RGP	

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:
Please reference Alpha Job #L1728927 on this report.

ANALYSIS

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Ethanol	Sample Specific Comments	TOTAL # BOTTLES
	HA14-B8-20170817	8/17/17	12:20	WATER		X		3

Container Type	Vial		-	-	-	-	-	-	-	-	-	-
Preservative	HCL		-	-	-	-	-	-	-	-	-	-

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	8/21/17		8/22/17 8:20

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

FORM NO: 01-01(I) (rev. 30-JUL-07)

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Sample Administration Receipt Documentation Log

Doc Log ID: 192159

Group Number(s): 1840677

Client: ALPHA ANALYTICAL

Delivery and Receipt Information

Delivery Method:	UPS	Arrival Timestamp:	08/22/2017 8:20
Number of Packages:	1	Number of Projects:	1
State/Province of Origin:	MA		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	No	Sample Date/Times match COC:	Yes
Samples Chilled:	Yes	VOA Vial Headspace ≥ 6mm:	No
Paperwork Enclosed:	Yes	Total Trip Blank Qty:	0
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Nicole Reiff (25684) at 08:34 on 08/22/2017

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT146	2.5	DT	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mg**	milligram(s)
C	degrees Celsius	**mL**	milliliter(s)
cfu	colony forming units	**MPN**	Most Probable Number
CP Units	cobalt-chloroplatinate units	**N.D.**	non-detect
F	degrees Fahrenheit	**ng**	nanogram(s)
g	gram(s)	**NTU**	nephelometric turbidity units
IU	International Units	**pg/L**	picogram/liter
kg	kilogram(s)	**RL**	Reporting Limit
L	liter(s)	**TNTC**	Too Numerous To Count
lb.	pound(s)	**µg**	microgram(s)
m3	cubic meter(s)	**µL**	microliter(s)
meq	milliequivalents	**umhos/cm**	micromhos/cm

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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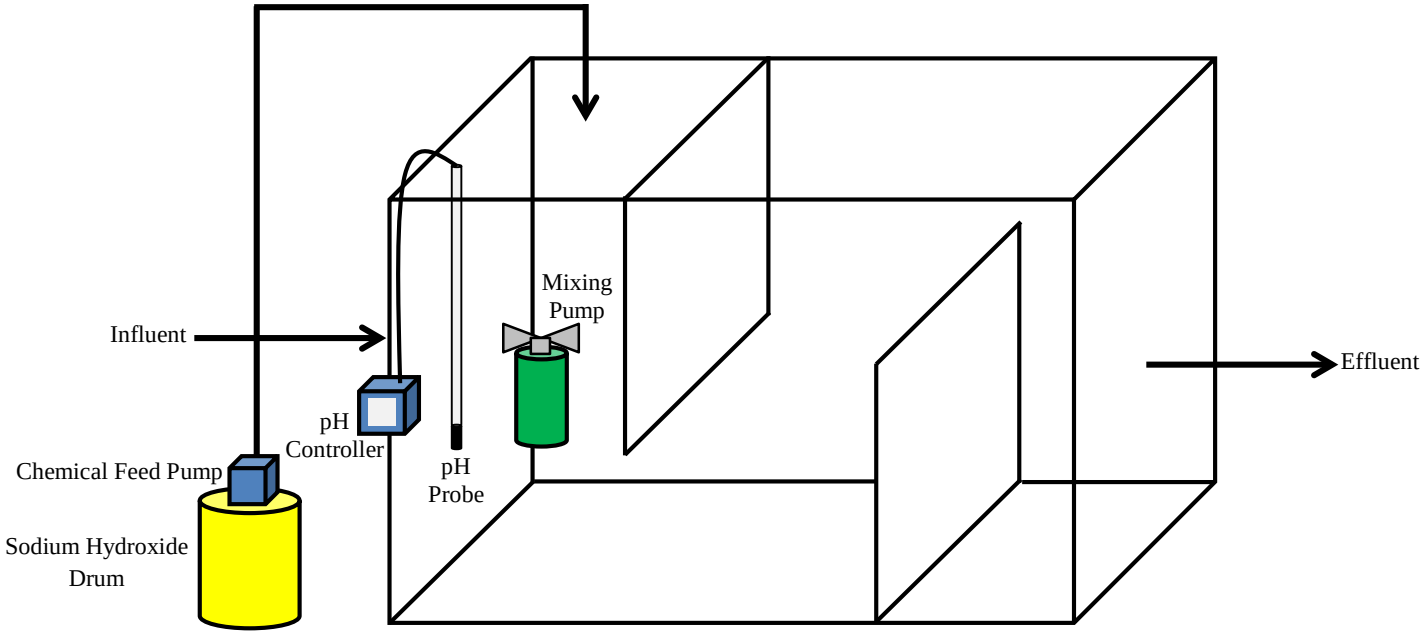
Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

APPENDIX I

Chemicals and Additives



Notes:

1.) Figure is not to scale.
2.) System layout can vary with site conditions.

89 Crawford Street
Leominster, Massachusetts 01453
Tel: 774.450.7177
Fax: 888.835.0617
www.lrt-llc.net

Configuration of pH Adjustment System

Lockwood Remediation Technologies, LLC

One Controller for the Broadest Range of Sensors.

Choose from 30 digital and analog sensor families for up to 17 di:erent 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 o:ers 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.

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

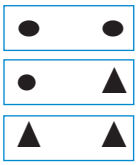
Choose from Hach's Broad Range of Digital and Analog Sensors

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	▲

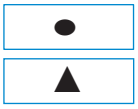
● = Digital ▲ = Analog

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



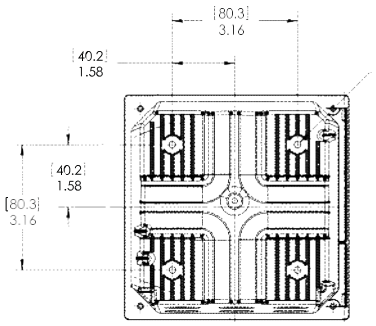
Specifications*

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.*

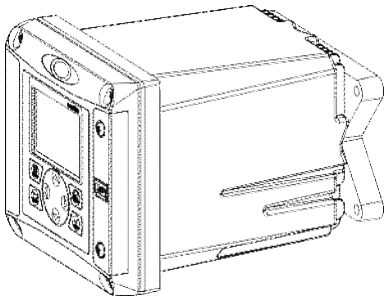
Dimensions

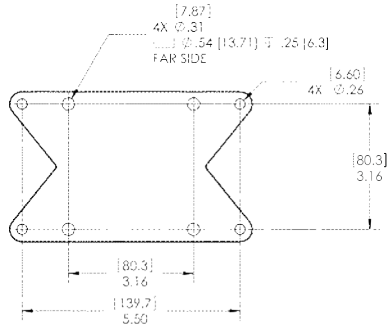
Surface Mounting Dimensions



Mounting Dimensions
(Rear View)

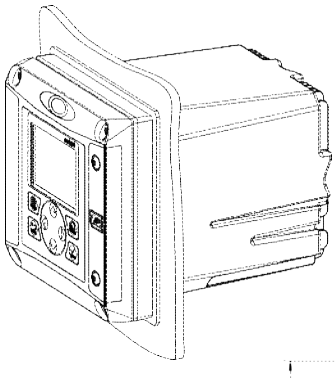
OR

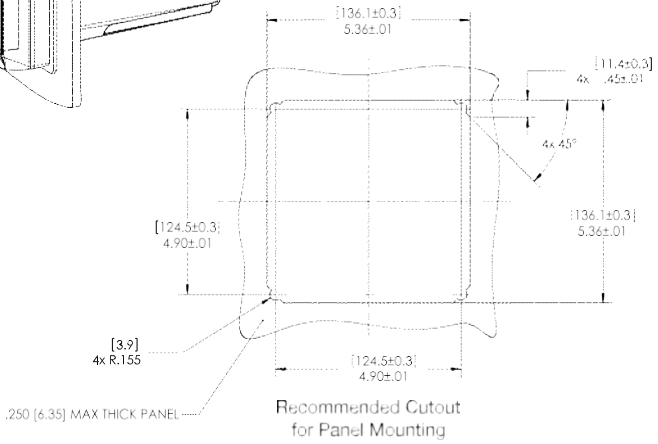




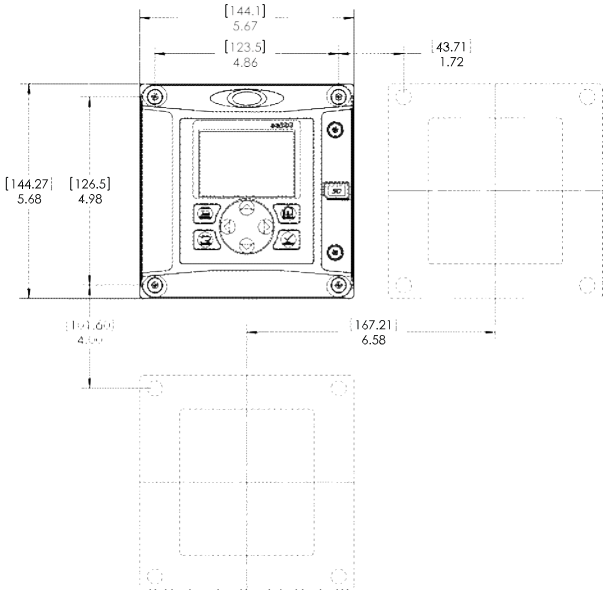
Bracket (supplied) for Surface Mounting
(Not compatible with Weather and Sun Shield
p/n 9220600 when surface mounting.)

Panel Mounting Dimensions



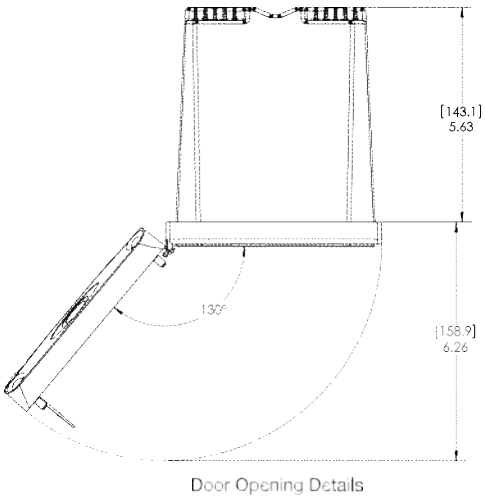


Recommended Cutout
for Panel Mounting

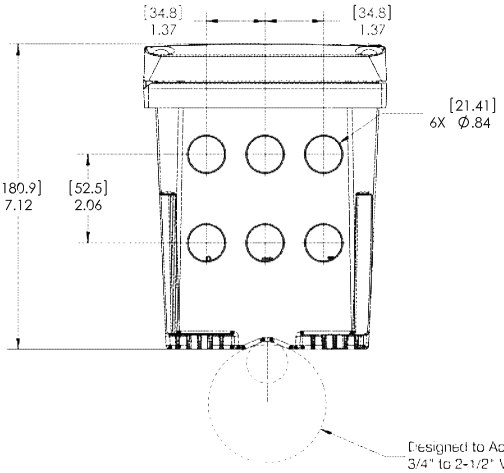


Minimum Spacing Dimensions
for Group Mounting

Top and Bottom Views

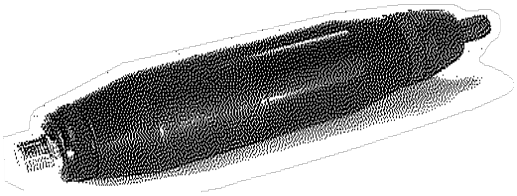


Door Opening Details

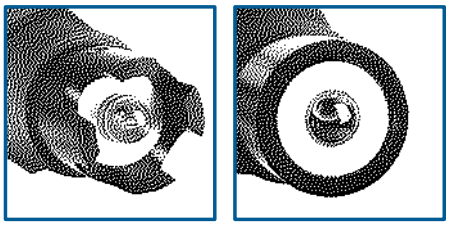


Designed to Accommodate
3/4" to 2-1/2" Vertical or Horizontal Pipe

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 Teflon®. 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 105ºC (32 to 221ºF)

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

Pressure Range
0 to 6.9 bar at 100ºC (0 to 100 psig at 212ºF)

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 Teflon 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 105ºC (32 to 221ºF)

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

Pressure Range
0 to 6.9 bar at 100ºC (0 to 100 psig at 212ºF)

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 Teflon 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 Teflon® 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.

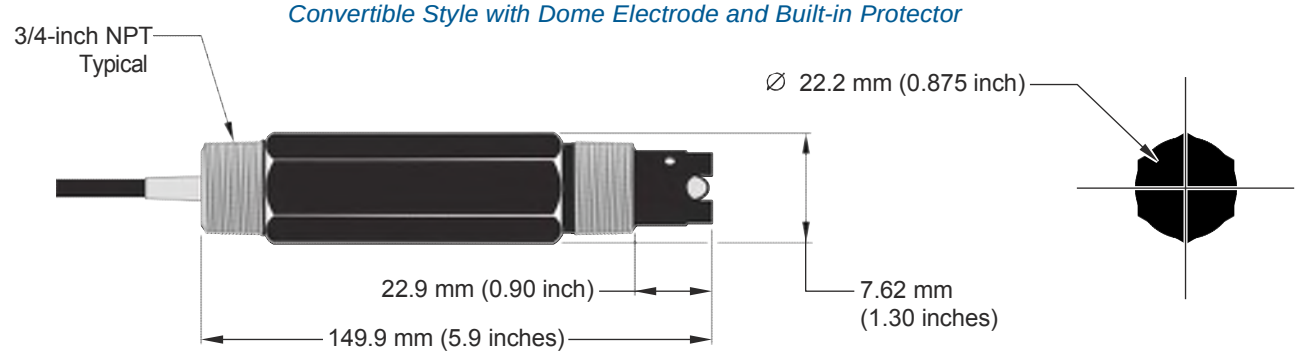
Insertion Style Sensor

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.

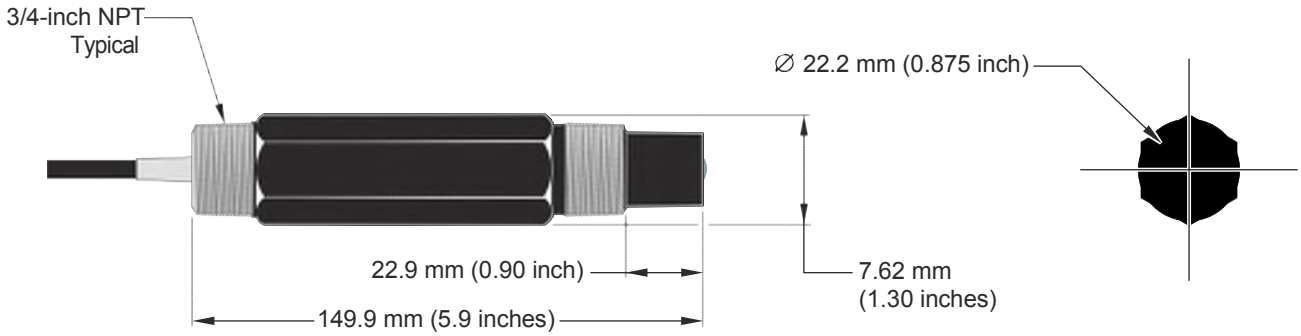
Sanitary Style Sensor

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



Lockwood Remediation Technologies, LLC

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 GPO (1.9 lph), and flow capacities to 58 GPO (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.

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
External Pace w/ Stop (125 SPM only)	--	Auto / Manual Selection [2]
Manual Stroke Rate	10:1 Ratio	100:1 Raio
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.

Operating Benefits

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

Aftermarket

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

Series A Plus
Electronic Metering Pumps

Lockwood Remediation Technologies, LLC

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
		GPO	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 <; N code) wITFE 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 IDegas Liquid End		150 (10)							150 (10)		
Connections:		Tubina	1 14' ID X 3 8' OD						3 8' D X 1 2' OD	1 4' D X 3 8' OD		
		Pioina	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/0-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 hput Power:	130 Watts
Average Input Power @ Max SPM:	50 Watts

Custom Engineered Designs - Pre-Engineered Systems

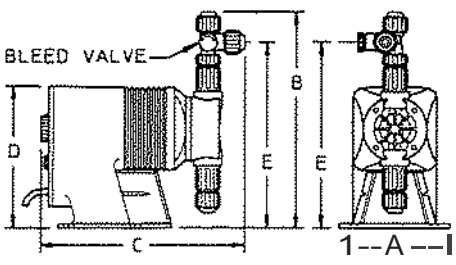
Pre-Engineered Systems

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 HOPE 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 IS2	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 IS3	5.0	9.9	9.5	6.5	8.5	10
LB0[illegible]4	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



95-Gallon OverPack - 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
# per Pallet:	3
Incinerable:	No
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

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."

Job Safety Analysis

pH/Chem Feed System

Date: 5/10/2016
Completed By: Tammie Hagie
Approved By: Mike Deso

Required PPE: Hard Hat, Safety Toe Boots, Reflective Vest, Safety Glasses, Chemical Resistant Gloves

TASK	POTENTIAL RISK/HAZARD	CONTROLS
Transporting acid/chemical drum	Splash, spill, heavy lifting	Inspect condition of drum prior to transportation. Use material handling devices when possible to move equipment (lift gates, pallet jacks, hand trucks, etc.). If necessary, use a ramp for loading/unloading wheeled devices, ensuring the ramp is properly supported prior to use. Lift with your knees and use drum dolly. Make sure drum is secure in vehicle prior to transportation. Review SDS on acid/chemical. Wear proper PPE and dispose of materials after clean up in a sealed container. Immediately use the eye wash station if acid or chemical comes in contact with your eye.
Opening acid drum	Splash, spill	Review MSDS on acid/chemical. Wear proper PPE and dispose of materials after clean up in a sealed container. Immediately use the eye wash station if acid or chemical comes in contact with your eye. Use bung wrench to open the drum properly.
Set up chemical feed pump	Splash, spill, leak	Wear proper PPE and dispose of materials after clean up in a sealed container. Immediately use the eye wash station if acid or chemical comes in contact with your eye. Monitor chem feed pump to assure its working and not leaking. Use chemical resistant tubing to transport liquid from the pump.
Notes:		

Note any changes/deviations to this JSA

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/m^3	(Vacated) TWA: 1 mg/m^3 TWA: 1 mg/m^3	IDLH: 15 mg/m^3 TWA: 1 mg/m^3	TWA: 1 mg/m^3

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