HALEY ALDRICH

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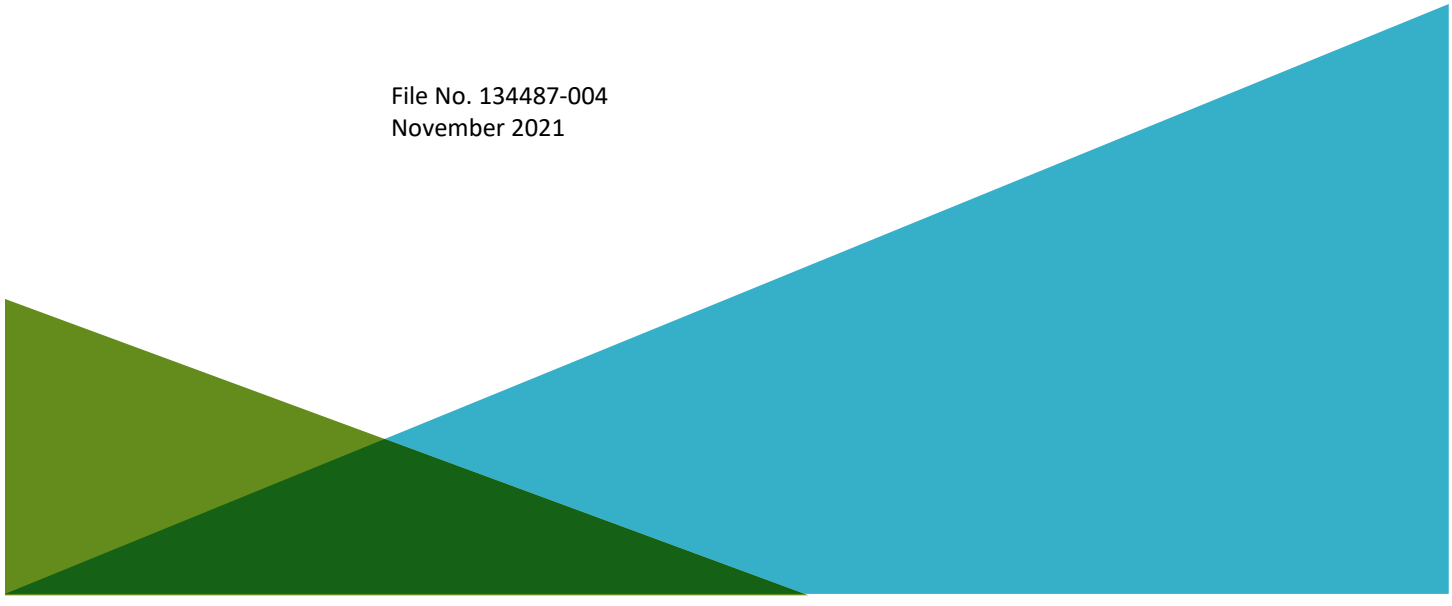
NPDES RGP APPLICATION - TEMPORARY CONSTRUCTION DEWATERING
MIT WEST LOT
269 TO 301 VASSAR STREET
CAMBRIDGE, MASSACHUSETTS

by
Haley & Aldrich, Inc.
Boston, Massachusetts

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

File No. 134487-004
November 2021



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12 November 2021
File No. 134487-004

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

Attention: Shauna Little

Subject: NPDES RGP Application - Temporary Construction Dewatering
MIT West Lot
269 to 301 Vassar Street
Cambridge, Massachusetts

Ladies and Gentlemen:

On behalf of our client, Massachusetts Institute of Technology (MIT), Haley & Aldrich, Inc. (Haley & Aldrich, Inc.) is submitting this application to request authorization under the National Pollutant Discharge Elimination System (NPDES), Remediation General Permit (RGP) for off-site discharge of temporary construction dewatering effluent during construction activities planned at the MIT West Lot (herein referred to as the "Site") at 269 to 301 Vassar Street located in Cambridge, Massachusetts. A copy of the Notice of Intent (NOI) is included in Appendix A.

EXISTING SITE CONDITIONS

The Site is a nearly rectangular shaped parcel, approximately 82,500 square feet (sq ft) in size, located between Vassar Street and the adjacent Massachusetts Bay Transportation Authority (MBTA) rail line (former Grand Junction Railroad) as shown on Figures 1 and 2. Except for the southwest portion of the Site which is currently occupied by a one to two story brick building housing the MIT Police offices, the remaining portions are paved surface parking. The MIT Police building, constructed in 1915, is approximately 17,476 sq ft in area. The topography of the Site is generally flat, and site grades generally range between elevation (El.) 20 to El. 22 Cambridge City Base (CCB) Datum[1].

SITE HISTORY

The Site is located within the former Charles River mudflats. The Charles River Embankment was constructed across the mudflats between 1883 and 1900 to reclaim tidal land and the Site was filled

[1] Elevations in this report are in feet and referenced to Cambridge City Base (CCB) Datum, which is 10.84 ft below the National Geodetic Datum of 1929 (NGVD).

between 1890 and 1910 to support road-oriented commerce and industrialization of this portion of Cambridge (known as Cambridgeport).

Past usages of the Site were determined through a review of Sanborn Fire Insurance Maps. Sanborn maps for the Site, dated 1900, 1934, 1986, and 1990 indicated the following information based on features depicted on the maps:

- The 1900 Sanborn Map of the subject Site depicts the site as unoccupied land along Vassar Street.
- The 1934, the Sanborn Map depicts a Motor Freight Terminal along the railroad tracks on the western end of the Site; located across from Fort Washington. At the eastern end of the Site is a U.S. Radiator Corporation Warehouse. The area of the Site between the terminal and warehouse remained unoccupied.
- The 1950 Sanborn Map depicts the Site as occupied by a series of warehouses, and a manufacturing facility.
- The 1986 through 2003 Sanborn Maps indicate that the warehouses at the eastern ends of the Site had been demolished and the area was being utilized for parking. The western end of the Site is depicted with two buildings). Based on historic records, the building located at 301 Vassar Street was reportedly remodeled in 2005 for the MIT Police Department.

PROPOSED CONSTRUCTION

The Site is The West Lot Graduate Student Housing project; proposed to include construction of two residential buildings with a total gross floor space of approximately 261,000 sq ft that includes student housing, dedicated common space, and retail space. Each residential building is proposed to have a portion of the building be constructed to five to eight stories and the other portion of the building up to ten stories. Around the buildings and to maintain connection to Fort Washington Park, the Site will be finished with landscape improvements. The ground level finished floor elevations are anticipated to be generally at existing ground surface elevation. No basement levels are planned. The existing MIT police station building will be demolished prior to construction.

REGULATORY STATUS

There are four Release Tracking Numbers (RTNs) associated with the subject property as summarized below. Limits of these Disposal Sites and RTNs which are applicable to this submittal are shown on Figure 2.

Release Tracking Number 3-19155

RTN 3-19155 was assigned to the 229 Vassar Street property, which includes the easternmost portion of the Site. A chemical testing program was conducted at the property associated with site development with the current residence hall (Simmons Hall) in 1999 which identified petroleum hydrocarbons, trichloroethylene, polycyclic aromatic hydrocarbons (PAHs), and metals (arsenic, barium, chromium, and

lead) in historic urban fill and underlying organic soils at concentrations exceeding the applicable Massachusetts Contingency Plan (MCP) RCS-1 Reportable Concentrations. Contaminants identified in soil were attributed to previous site filling. Groundwater was not found to be impacted. A Release Notification Form (RNF) was submitted to the Massachusetts Department of Environmental Protection (MassDEP) on 7 January 2000 to notify of the 120-day reporting condition and MassDEP assigned RTN 3-19155 to the Site.

Release Abatement Measure (RAM) activities were undertaken to remove excavated soil during construction of Simmons Hall and associated utility installations. Approximately 14,584 cubic yards (cu yd) of contaminated soil was excavated and transported offsite. Excavation for the building basement removed the fill and organic deposits within the limits of the building footprint, however, urban fill remains present in the portion of the Site not occupied by the building (and within the limits of the subject Site). A Method 3 Risk Characterization was conducted following completion of RAM activities which indicated that an Activity and Use Limitation (AUL) was necessary to maintain a condition of No Significant Risk. As such a Class A-3 Response Action Outcome (RAO), which included the implementation of an AUL, was submitted to MassDEP for RTN 3-19155 in October 2004.

The AUL includes provisions to prevent disturbance of potentially impacted soils remaining at the Site. Specifically, the AUL prohibits the use of soils for cultivation of fruits and vegetables for human consumption, and construction and occupation of a building within the AUL as a residence, elementary or secondary school, nursery, daycare, active recreational area and/or any other such use at which a child's presence is likely.

Release Tracking Numbers 3-19125 and 3-20017

Subsurface petroleum staining of soil and odors were encountered at a depth of 6 to 10 feet (ft) below ground surface (bgs) during the removal of two (2) underground storage tanks (USTs) at 289 Vassar Street (within the Site, see Figure 2) in August 1999. MassDEP was notified of the release in December 1999 and assigned RTN 3-19125 to the release. Subsequent test pit explorations, soil sampling and chemical testing conducted by McPhail Associates, Inc. beneath the floor slab of the former building identified elevated concentrations of lead, petroleum hydrocarbons, and naphthalene in Fill material located at depths above that of the former USTs. Therefore, these impacts were determined to not be associated with RTN 3-19125 and MassDEP assigned RTN 3-20017 to the release on 3 October 2000. An MCP Phase I Report and Tier Classification Report was submitted to MassDEP on 5 January 2001, at which time RTNs 3-19125 and 3-20017 were linked and the Site was classified as a Tier II Disposal Site. RAM activities were conducted at 289 Vassar Street which resulted in removal of a portion of the Fill soils that were present beneath the former building floor slab.

Both releases were closed in December 2004 with a Class A-3 RAO, dated November 2004, which included the implementation of an AUL at 289 Vassar Street. The AUL limited future uses by precluding the following: use of soils for cultivation of fruits or vegetables for human consumption; construction and occupation of a building within the AUL area as a residence, elementary or secondary school, nursery, daycare, active recreational area and/or any other such use at which a child's presence is likely; and subsurface activities associated with utility work or future construction which may result in the

disturbance, excavation, relocation or removal of contaminated soil below El. 19 (approximately 2 ft below paved parking lot surface) unless activities are conducted certain obligations set forth in the AUL.

Haley & Aldrich subsequently conducted a Method 3 Risk Characterization using historical data included in the November 2004 RAO and representative of current site conditions. The results of which indicated that an AUL is not necessary to maintain a condition of No Significant Risk at 289 Vassar Street. As such, a Revised Permanent Solution Statement was submitted to MassDEP for RTNs 3-19125 and 3-20017 on 25 June 2020 and an AUL Termination was filed with the Middlesex County South Registry District of the Land Court on 22 June 2020.

Release Tracking Number 3-37131

In preparation for development, subsurface investigations conducted in 2021 at the Site by Haley & Aldrich identified levels of total petroleum hydrocarbons (TPH), PAHs, and metals in historic urban Fill soil and limited underlying Organic Deposits exceeding applicable MCP RCS-1 Reportable Concentrations. The contaminants are attributed to historic urban fill and not a point source release and are typical in this area of Cambridge. MIT submitted a Release Notification Form (BWSC103) to MassDEP for the reportable concentrations detected in soil as a 120-day release notification on 3 November 2021. MassDEP subsequently assigned RTN 3-37131 to the release.

RECEIVING WATER INFORMATION

On 15 October 2021, Haley & Aldrich collected a receiving water sample from the outfall location into the Charles River and submitted to a MassDEP-certified laboratory, Alpha Analytical, Inc. of Westborough, Massachusetts (Alpha), for NPDES receiving water (freshwater) parameters, including total metals, ammonia, pH, and hardness. Analytical results are summarized in Table I. The laboratory data report is enclosed in Appendix B.

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 MassDEP on 12 November 2021. We have additionally confirmed with MassDEP that the dilution factor for the receiving water is 75.1. The StreamStats report, Dilution Factor calculations, and confirmation from MassDEP are included in Appendix C.

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

SOURCE WATER INFORMATION

On 15 October 2021, one groundwater sample was collected from observation well GP-2(OW) to evaluate groundwater (source water) quality with respect to the NPDES RGP dewatering effluent criteria. Refer to Figure 3 for observation well location.

The groundwater sample was submitted to Alpha for chemical analysis of 2017 NPDES RGP parameters including volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), PAHs, total metals, total petroleum hydrocarbons, ethanol, pesticides, polychlorinated biphenyls (PCBs), total suspended solids, chloride, total cyanide, total phenols, ammonia, and total residual chlorine.

The data are compared to the applicable MCP Reportable Concentration RCGW-2 criteria and the site-specific 2017 NPDES RGP Freshwater Effluent Limits as determined in the Technology Based Effluent Limits (TBEL) calculations. The source water quality data are summarized in Table I. Laboratory data reports are included in Appendix B.

As part of site characterization, a groundwater sample was collected at the Site in February 2020 from observation well WL-2. The sample was submitted to Alpha for analysis of VOCs, SVOCs, total Resource Conservation and Recovery Act (RCRA) 8 metals, EPH carbon ranges, and VPH carbon ranges. These data are also summarized in Table I with laboratory data reports included in Appendix B.

DISCHARGE INFORMATION

During construction of the buildings, it will be necessary to perform temporary construction dewatering to control surface water runoff from precipitation, groundwater seepage, and construction-generated water to enable construction in-the-dry. Construction and construction dewatering is currently anticipated to being in February 2022 and is anticipated to be required for up to 12 months. On average, we estimate effluent discharge rates of about 50 to 100 gallons per minute (gpm) or less, with occasional peak flows of approximately 150 gpm during significant precipitation events. Temporary dewatering will be conducted from sumps located in excavations.

Construction dewatering under this RGP will include piping and discharging to storm drains located near the Site that ultimately discharge to the Charles River through Outfall D11OF0010. The proposed discharge locations, route, and outfall are shown on Figure 4.

DEWATERING TREATMENT SYSTEM INFORMATION

An effluent treatment system will be designed and implemented by the site contractor(s) to meet the applicable 2017 RGP Discharge Effluent Criteria. Prior to discharge, collected water will be routed through a sedimentation tank and bag filters with pH control, at a minimum, to remove suspended solids and undissolved chemical constituents and adjust the pH to within the limits established by the permit. The proposed treatment system schematic is provided on Figure 5. A Notice of Change (NOC) will be submitted to EPA if additional treatment components need to be mobilized at the Site.
The site Contractor has not yet submitted their construction dewatering submittal, which will include details of the proposed dewatering system along with Safety Data Sheets (SDSs) and fact sheets for possible chemical additives (if needed to adjust pH or reduce suspended sediments). A Best Management Practices Plan (BMPP), which outlines the proposed discharge operations covered under the RGP, will be available at the Site and is not being submitted with this NOI.

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 D. Based on the results of the determination, the project and action area are considered to meet FWS Criterion A because no listed species or critical habitat are present within the project action area. Additionally, a MassDEP Phase 1 Site Assessment Map is included in Appendix D, which confirms that no critical habitats are present at the Site.

DOCUMENTATION OF NATIONAL HISTORIC PRESERVATION ACT REQUIREMENTS

Based on a review of the resources provided by the U.S. National Register of Historic Places and a review of the Massachusetts Cultural Resource Information System (MACRIS), no historic properties are within the Site. The Site is nearby the Charles River Basin Historic District (property ID 78000436) and Fort Washington (property ID 73000284), but discharge and discharge-related activities are not considered to have the potential to affect to the above historic area/property. The project site meets Criterion A. Documentation is included in Appendix E.

Note that the Metropolitan Supply Company Warehouse was identified on the MACRIS as MHC# CAM.362 and CAM.363, addressed at 277-287 Vassar Street and 289-293 Vassar Street. Further review indicates the MACRIS listings for the Metropolitan Supply Company Warehouse are in fact located west of the Site, along Vassar Street, at the corner of Massachusetts Avenue and not within the Site limits.

SUPPLEMENTAL INFORMATION

Permits for Temporary construction dewatering will also be required from the City of Cambridge. The contractor will submit the City of Cambridge permit concurrently with this application. A copy of the permit application is included in Appendix F.

Owner and operation information are provided below for reference:

Owner:
Massachusetts Institute of Technology
77 Massachusetts Avenue, 10-370
Cambridge, MA 02139
Attn: Louis DiBerardinis

Operator:
John Moriarty & Associates
3 Church Street
Winchester, MA 01890
Attn: Josh Snyder

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.

Shay Gerald
Engineer

Corinne M. McKenzie
Project Manager

Joel S. Mooney, P.E. (MA), LSP
Principal | Senior Vice President

Enclosures:

- Table I – Summary of Water Quality Data
- Figure 1 – Project Locus
- Figure 2 – Site Plan
- Figure 3 – Site and Subsurface Exploration Location Plan
- Figure 4 – Proposed Discharge Route
- Figure 5 – Proposed Treatment System Schematic
- Appendix A – Notice of Intent (NOI)
- Appendix B – Laboratory Data Reports
- Appendix C – Effluent Limitations Documentation
- Appendix D – Endangered Species Act Assessment
- Appendix E – National Historic Preservation Act Review
- Appendix F – Cambridge Dewatering Permit Application

TABLE

TABLE I
SUMMARY OF WATER QUALITY DATA
MIT WEST LOT
CAMBRIDGE, MA
FILE NO. 134487

Sample Location	Action Level			WL-2	GP-2(OW)	Receiving Water - Charles River
Location Name	MA RGP Freshwater WQBELs 2017	MA RGP Freshwater TBELs 2017	MCP Reportable Concentration RCGW-2 2014	WL-2	GP-2(OW)	MIT WEST LOT-RW
Sample Name				WL-2_20200210	GP-2(OW)-2021-1015	MIT WEST LOT-RW-2021-1015
Sample Date				02/10/2020	10/15/2021	10/15/2021
					L2156742-01	
Lab Sample ID				L2005972-01	L2158218-01	L2156742-02
Volatile Organic Compounds (ug/L)						
1,1,1,2-Tetrachloroethane	NA	NA	10	ND (1)	-	-
1,1,1-Trichloroethane	200	200	4000	ND (1)	ND (2)	-
1,1,2,2-Tetrachloroethane	NA	NA	9	ND (1)	-	-
1,1,2-Trichloroethane	5	5	900	ND (1)	ND (1.5)	-
1,1-Dichloroethane	70	70	2000	ND (1)	ND (1.5)	-
1,1-Dichloroethene	3.2	3.2	80	ND (1)	ND (1)	-
1,1-Dichloropropene	NA	NA	NA	ND (2)	-	-
1,2,3-Trichlorobenzene	NA	NA	NA	ND (2)	-	-
1,2,3-Trichloropropane	NA	NA	10000	ND (2)	ND (0.03)	-
1,2,4-Trichlorobenzene	NA	NA	200	ND (2)	-	-
1,2,4-Trimethylbenzene	NA	NA	100000	ND (2)	-	-
1,2-Dibromo-3-chloropropane (DBCP)	NA	NA	NA	ND (2)	ND (0.01)	-
1,2-Dibromoethane (Ethylene Dibromide)	0.05	0.05	2	ND (2)	ND (0.01)	-
1,2-Dichlorobenzene	600	600	2000	ND (1)	ND (5)	-
1,2-Dichloroethane	5	5	5	ND (1)	ND (1.5)	-
1,2-Dichloroethene (total)	NA	NA	100	ND (1)	-	-
1,2-Dichloropropane	NA	NA	3	ND (1)	-	-
1,3,5-Trimethylbenzene	NA	NA	1000	ND (2)	-	-
1,3-Dichlorobenzene	320	320	6000	ND (1)	ND (5)	-
1,3-Dichloropropane	NA	NA	NA	ND (2)	-	-
1,3-Dichloropropene	NA	NA	10	ND (0.4)	-	-
1,4-Dichlorobenzene	5	5	60	ND (1)	ND (5)	-
1,4-Dioxane	200	200	6000	ND (250)	-	-
2,2-Dichloropropane	NA	NA	NA	ND (2)	-	-
2-Butanone (Methyl Ethyl Ketone)	NA	NA	50000	ND (5)	-	-
2-Chlorotoluene	NA	NA	NA	ND (2)	-	-
2-Hexanone	NA	NA	10000	ND (5)	-	-
2-Phenylbutane (sec-Butylbenzene)	NA	NA	NA	ND (2)	-	-
4-Chlorotoluene	NA	NA	NA	ND (2)	-	-
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	NA	NA	50000	ND (5)	-	-
Acetone	7970	7970	50000	ND (5)	ND (10)	-
Benzene	5	5	1000	ND (0.5)	ND (1)	-
Bromobenzene	NA	NA	NA	ND (2)	-	-
Bromodichloromethane	NA	NA	6	ND (1)	-	-
Bromoform	NA	NA	700	ND (2)	-	-
Bromomethane (Methyl Bromide)	NA	NA	7	ND (2)	-	-
Carbon disulfide	NA	NA	10000	ND (2)	-	-
Carbon tetrachloride	1.6	4.4	2	ND (1)	ND (1)	-
Chlorobenzene	NA	NA	200	ND (1)	-	-
Chlorobromomethane	NA	NA	NA	ND (2)	-	-
Chloroethane	NA	NA	10000	ND (2)	-	-
Chloroform (Trichloromethane)	NA	NA	50	ND (1)	-	-
Chloromethane (Methyl Chloride)	NA	NA	10000	ND (2)	-	-
cis-1,2-Dichloroethene	70	70	20	ND (1)	ND (1)	-
cis-1,3-Dichloropropene	NA	NA	5	ND (0.4)	-	-
Cymene (p-Isopropyltoluene)	NA	NA	10000	ND (2)	-	-
Dibromochloromethane	NA	NA	20	ND (1)	-	-
Dibromomethane	NA	NA	50000	ND (2)	-	-
Dichlorodifluoromethane (CFC-12)	NA	NA	100000	ND (2)	-	-
Diisopropyl ether (DIPE)	NA	NA	NA	ND (2)	-	-
Ethyl Ether	NA	NA	NA	ND (2)	-	-
Ethylbenzene	100	100	5000	ND (1)	ND (1)	-
Hexachlorobutadiene	NA	NA	50	ND (0.6)	-	-
Isopropylbenzene (Cumene)	NA	NA	100000	ND (2)	-	-
m,p-Xylenes	100	100	NA	ND (2)	ND (2)	-
Methyl Tert Butyl Ether (MTBE)	20	70	5000	ND (2)	ND (10)	-
Methylene chloride	4.6	4.6	2000	ND (2)	ND (1)	-
Naphthalene	20	20	700	ND (2)	-	-
n-Butylbenzene	NA	NA	NA	ND (2)	-	-
n-Propylbenzene	NA	NA	10000	ND (2)	-	-
o-Xylene	100	100	NA	ND (1)	ND (1)	-
Styrene	NA	NA	100	ND (1)	-	-
Tert-Amyl Methyl Ether (TAME)	90	90	NA	ND (2)	ND (20)	-
Tert-Butyl Alcohol (tert-Butanol)	120	120	NA	-	ND (100)	-
Tert-Butyl Ethyl Ether (ETBE)	NA	NA	NA	ND (2)	-	-
tert-Butylbenzene	NA	NA	10000	ND (2)	-	-
Tetrachloroethene	3.3	5	50	ND (1)	ND (1)	-
Tetrahydrofuran	NA	NA	50000	ND (2)	-	-
Toluene	100	100	40000	ND (1)	ND (1)	-
trans-1,2-Dichloroethene	NA	NA	80	ND (1)	-	-
trans-1,3-Dichloropropene	NA	NA	5	ND (0.4)	-	-
Trichloroethene	5	5	5	ND (1)	ND (1)	-
Trichlorofluoromethane (CFC-11)	NA	NA	100000	ND (2)	-	-
Vinyl chloride	2	2	2	ND (1)	ND (1)	-
Xylene (total)	100	100	3000	ND (1)	ND (1)	-
Volatile Organic Compounds SIM (ug/L)						
1,4-Dioxane	200	200	6000	-	ND (5)	-
Semi-Volatile Organic Compounds (ug/L)						
1,2,4-Trichlorobenzene	NA	NA	200	ND (5)	-	-
1,2-Dichlorobenzene	600	600	2000	ND (2)	-	-
1,3-Dichlorobenzene	320	320	6000	ND (2)	-	-
1,4-Dichlorobenzene	5	5	60	ND (2)	-	-
2,2'-oxybis(1-Chloropropane)	NA	NA	100	ND (2)	-	-
2,4,5-Trichlorophenol	NA	NA	3000	ND (5)	-	-
2,4,6-Trichlorophenol	NA	NA	500	ND (5)	-	-
2,4-Dichlorophenol	NA	NA	2000	ND (5)	-	-
2,4-Dimethylphenol	NA	NA	40000	ND (5)	-	-
2,4-Dinitrophenol	NA	NA	20000	ND (20)	-	-
2,4-Dinitrotoluene	NA	NA	20000	ND (5)	-	-
2,6-Dinitrotoluene	NA	NA	10000	ND (5)	-	-
2-Chlorophenol	NA	NA	7000	ND (2)	-	-
2-Methylphenol (o-Cresol)	NA	NA	50000	ND (5)	-	-
2-Nitrophenol	NA	NA	10000	ND (10)	-	-
3&4-Methylphenol	NA	NA	NA	ND (5)	-	-
3,3'-Dichlorobenzidine	NA	NA	2000	ND (5)	-	-
4-Bromophenyl phenyl ether	NA	NA	10000	ND (2)	-	-
4-Chloroaniline	NA	NA	300	ND (5)	-	-
4-Nitrophenol	NA	NA	10000	ND (10)	-	-
Acetophenone	NA	NA	100	ND (5)	-	-
Aniline	NA	NA	100000	ND (2)	-	-
Azobenzene	NA	NA	NA	ND (2)	-	-
bis(2-Chloroethoxy)methane	NA	NA	50000	ND (5)	-	-
bis(2-Chloroethyl)ether	NA	NA	30	ND (2)	-	-
bis(2-Ethylhexyl)phthalate	2.2	190	50000	ND (3)	ND (2.2)	-
Butyl benzylphthalate	NA	190	10000	ND (5)	ND (5)	-
Dibenzofuran	NA	NA	10000	ND (2)	-	-
Diethyl phthalate	NA	190	9000	ND (5)	ND (5)	-
Dimethyl phthalate	NA	190	50000	ND (5)	ND (5)	-
Di-n-butylphthalate	NA	190	5000	ND (5)	ND (5)	-
Di-n-octyl phthalate	NA	190	100000	ND (5)	ND (5)	-
Isophorone	NA	NA	10000	ND (5)	-	-
Nitrobenzene	NA	NA	50000	ND (2)	-	-
Phenol	300	1080	2000	ND (5)	-	-

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FILE NO. 134487

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Sample Name				WL-2_20200210	GP-2(OW)-2021-1015	MIT WEST LOT-RW-2021-1015
Sample Date				02/10/2020	10/15/2021	10/15/2021
Lab Sample ID				L2005972-01	L2156742-01 L2158218-01	L2156742-02
Semi-Volatile Organic Compounds (SIM) (ug/L)						
2-Chloronaphthalene	NA	NA	100000	ND (0.2)	-	-
2-Methylnaphthalene	NA	NA	2000	ND (0.1)	-	-
Acenaphthene	100	100	6000	ND (0.1)	ND (0.1)	-
Acenaphthylene	100	100	40	ND (0.1)	ND (0.1)	-
Anthracene	100	100	30	ND (0.1)	ND (0.1)	-
Benzo(a)anthracene	0.0038	1	1000	ND (0.1)	ND (0.1)	-
Benzo(a)pyrene	0.0038	1	500	ND (0.1)	ND (0.1)	-
Benzo(b)fluoranthene	0.0038	1	400	ND (0.1)	ND (0.1)	-
Benzo(g,h,i)perylene	100	100	20	ND (0.1)	ND (0.1)	-
Benzo(k)fluoranthene	0.0038	1	100	ND (0.1)	ND (0.1)	-
Chrysene	0.0038	1	70	ND (0.1)	ND (0.1)	-
Dibenz(a,h)anthracene	0.0038	1	40	ND (0.1)	ND (0.1)	-
Fluoranthene	100	100	200	ND (0.1)	ND (0.1)	-
Fluorene	100	100	40	ND (0.1)	ND (0.1)	-
Hexachlorobenzene	NA	NA	1	ND (0.8)	-	-
Hexachlorobutadiene	NA	NA	50	ND (0.5)	-	-
Hexachloroethane	NA	NA	100	ND (0.8)	-	-
Indeno(1,2,3-cd)pyrene	0.0038	1	100	ND (0.1)	ND (0.1)	-
Naphthalene	20	20	700	ND (0.1)	ND (0.1)	-
Pentachlorophenol	1	1	200	ND (0.8)	ND (1)	-
Phenanthrene	100	100	10000	ND (0.1)	ND (0.1)	-
Pyrene	100	100	20	ND (0.1)	ND (0.1)	-
Total Petroleum Hydrocarbons (mg/L)						
Ethanol	NA	NA	10	-	ND (20)	-
Petroleum hydrocarbons	5	5	5	-	ND (3.6)	-
EPH (ug/L)						
C11-C22 Aromatic Hydrocarbons, Adjusted	NA	NA	5000	ND (100)	-	-
C19-C36 Aliphatic Hydrocarbons	NA	NA	50000	ND (100)	-	-
C9-C18 Aliphatic Hydrocarbons	NA	NA	5000	ND (100)	-	-
Inorganic Compounds (mg/L)						
Chromium VI (Hexavalent), Dissolved	0.011	0.323	0.3	-	ND (0.01)	ND (0.01)
Antimony, Total	0.64	0.206	8	-	ND (0.004)	ND (0.004)
Arsenic, Total	0.01	0.104	0.9	ND (0.005)	0.00652	ND (0.001)
Barium, Total	NA	NA	50	0.112	-	-
Cadmium, Total	0.00025	0.0102	0.004	ND (0.004)	ND (0.0002)	ND (0.0002)
Chromium, Total	NA	NA	0.3	ND (0.01)	0.0069	ND (0.001)
Copper, Total	0.009	0.242	100	-	0.00804	0.00265
Hardness, Total	NA	NA	NA	-	533	52.4
Iron, Total	1	5	NA	-	**8.55**	0.669
Lead, Total	0.0025	0.16	0.01	ND (0.01)	0.00198	**0.00532**
Mercury, Total	0.00077	0.000739	0.02	ND (0.0002)	ND (0.0002)	ND (0.0002)
Nickel, Total	0.052	1.45	0.2	-	0.00512	ND (0.002)
Selenium, Total	0.005	0.2358	0.1	ND (0.01)	ND (0.005)	ND (0.005)
Silver, Total	0.0032	0.0351	0.007	ND (0.007)	ND (0.0004)	ND (0.0004)
Zinc, Total	0.12	0.42	0.9	-	0.02971	0.02321
Other						
Ammonia, Total (mg/L)	NA	NA	NA	-	3.52	0.129
Chloride, Total (mg/L)	NA	NA	NA	-	1730	-
Chlorine, residual, Total (mg/L)	0.011	0.2	NA	-	ND (0.02)	-
Cyanide, Total (mg/L)	0.0052	178	0.03	-	ND (0.005)	-
Total Phenols (mg/L)	0.3	1.08	NA	-	ND (0.03)	-
Total Suspended Solids (TSS) (mg/L)	30	30	NA	-	**97**	-
pH (lab), Total (pH units)	NA	NA	NA	-	6.8	7.1
Pesticides and PCBs (ug/L)						
Aroclor-1016 (PCB-1016)	6.40E-05	6.40E-05	5	-	ND (0.25)	-
Aroclor-1221 (PCB-1221)	6.40E-05	6.40E-05	5	-	ND (0.25)	-
Aroclor-1232 (PCB-1232)	6.40E-05	6.40E-05	5	-	ND (0.25)	-
Aroclor-1242 (PCB-1242)	6.40E-05	6.40E-05	5	-	ND (0.25)	-
Aroclor-1248 (PCB-1248)	6.40E-05	6.40E-05	5	-	ND (0.25)	-
Aroclor-1254 (PCB-1254)	6.40E-05	6.40E-05	5	-	ND (0.25)	-
Aroclor-1260 (PCB-1260)	6.40E-05	6.40E-05	5	-	ND (0.2)	-
VPH (ug/L)						
C5-C8 Aliphatic Hydrocarbons, Adjusted	NA	NA	3000	ND (100)	-	-
C9-C10 Aromatic Hydrocarbons	NA	NA	4000	ND (100)	-	-
C9-C12 Aliphatic Hydrocarbons, Adjusted	NA	NA	5000	ND (100)	-	-

ABBREVIATIONS AND NOTES:
mg/L: milligrams per liter
µg/L: micrograms per liter

-: Not Analyzed
MCP: 310 CMR 40.0000 Massachusetts Contingency Plan effective 25 April 2014; revisions 23 May 2014.
NA: Not Applicable
ND (2.5): Not detected, number in parentheses is the laboratory detection limit
RC: MCP Reportable Concentration

- Analytes detected in at least one sample are reported herein. For a complete list of Analytes see the laboratory data sheets.
- Bold values indicate an exceedance of the **RCGW-2** or **WQBEL/TBEL** criteria.

FIGURES

SITE COORDINATES: 42°21'22"N, 71°06'12"W

MAP SOURCE: USGS

HALEY ALDRICH

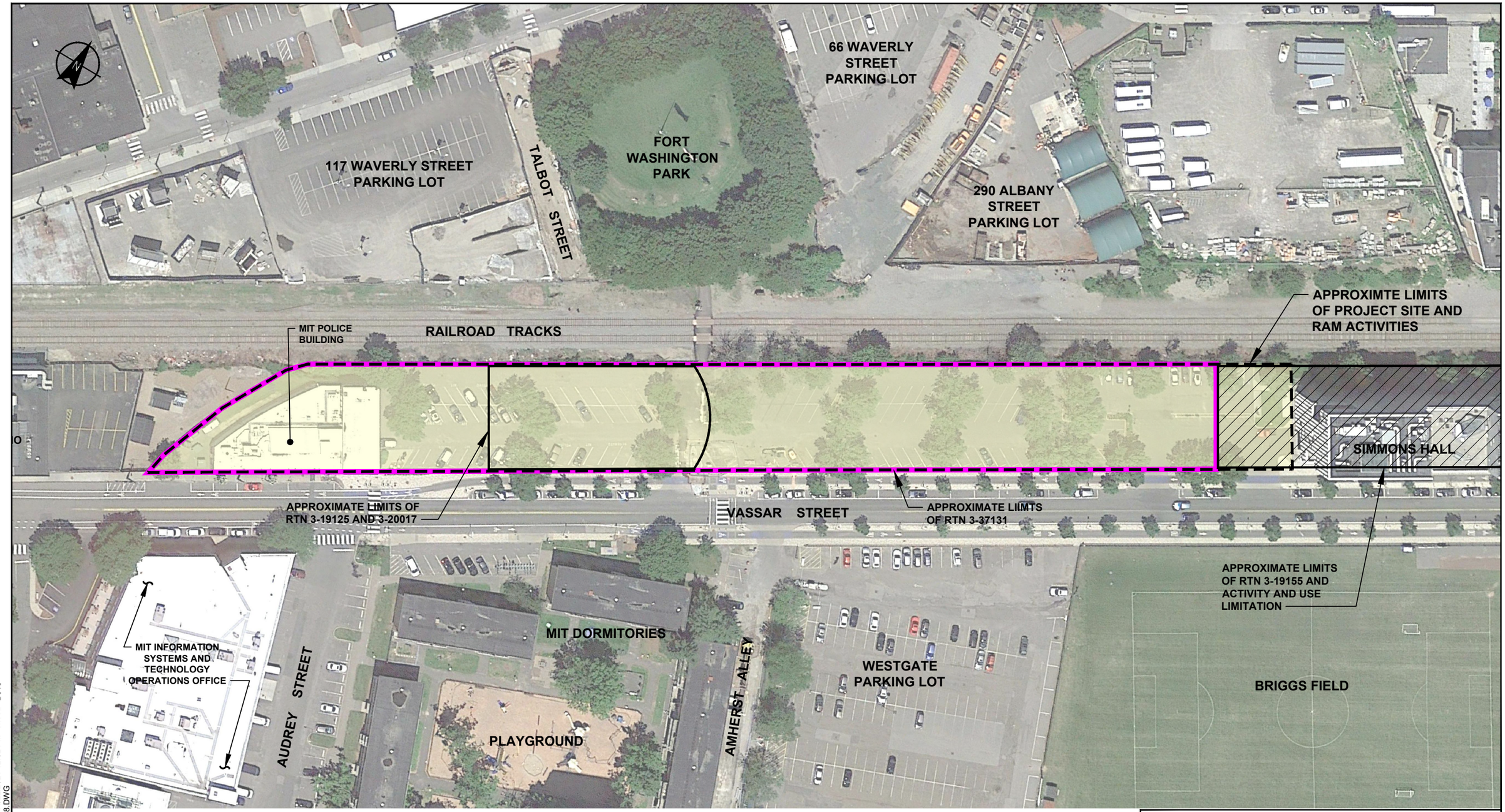
MIT WEST LOT
GRADUATE STUDENT HOUSING
269 TO 301 VASSAR STREET
CAMBRIDGE, MASSACHUSETTS

PROJECT LOCUS

APPROXIMATE SCALE: 1 INCH = 2,000 FEET
NOVEMBER 2021

FIGURE 1

0134487_003_LOCUS HALEYALDRICHCHESCOCK



NOTE

1. IMAGE, DATED 22 JUNE 2019, TAKEN ELECTRONICALLY FROM GOOGLE EARTH PRO.

0 80 160

APPROXIMATE SCALE IN FEET

HALEY ALDRICH

MIT WEST LOT
GRADUATE STUDENT HOUSING
269 TO 301 VASSAR STREET
CAMBRIDGE, MASSACHUSETTS

SITE PLAN

SCALE: AS SHOWN
NOVEMBER 2021

FIGURE 2

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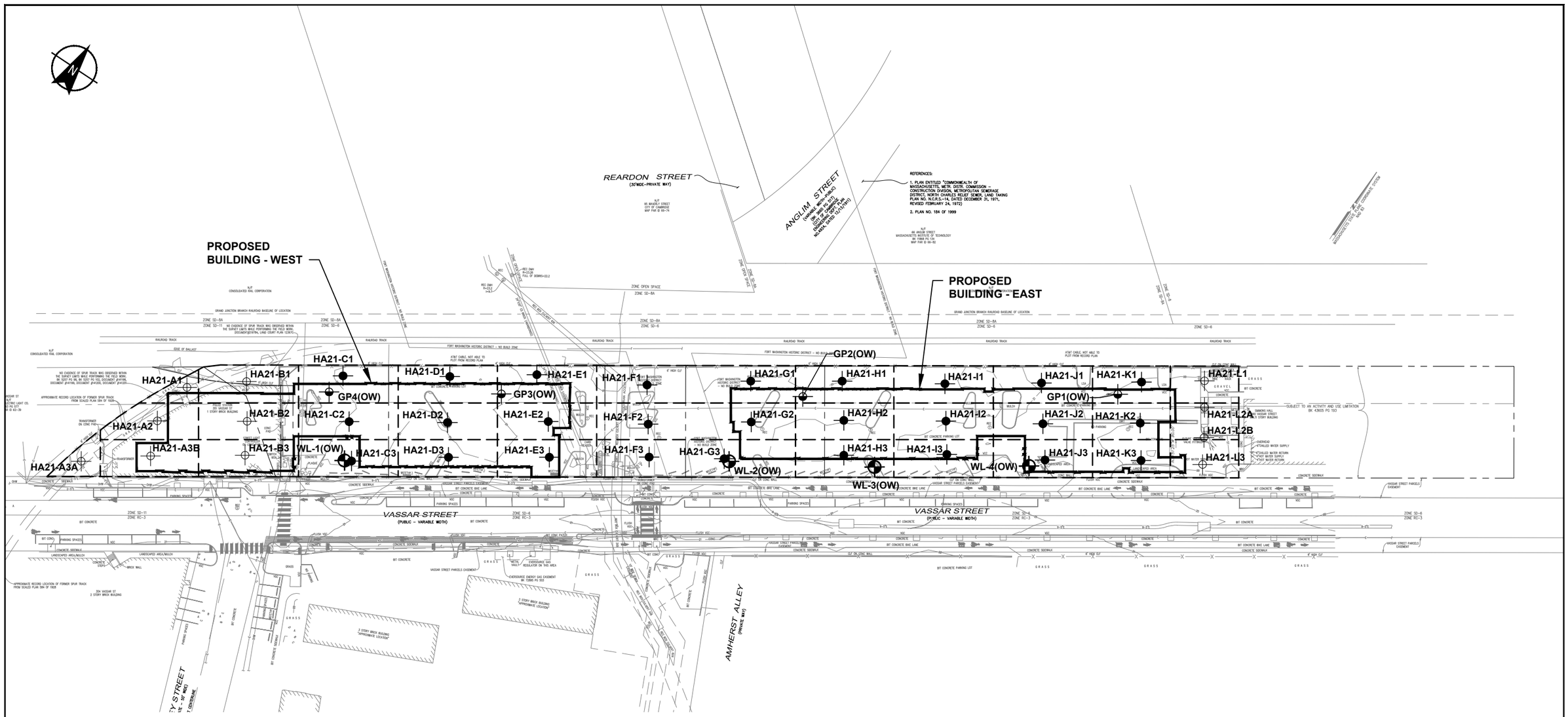

LEGEND

HA21-C1 DESIGNATION AND APPROXIMATE LOCATION OF GEOPROBE ADVANCED BY NORTHERN DRILL SERVICE, INC. OF NORTHBOROUGH, MASSACHUSETTS BETWEEN 30 AUGUST AND 3 SEPTEMBER 2021 AND MONITORED BY A HALEY & ALDRICH STAFF GEOLOGIST

GP1(OW) DESIGNATION AND APPROXIMATE LOCATION OF GEOPROBE ADVANCED BY G&M SUBSURFACE INVESTIGATIONS BETWEEN 27 AND 28 APRIL 2021 AND MONITORED BY A HALEY & ALDRICH STAFF GEOLOGIST

HA21-A1 DESIGNATION AND APPROXIMATE LOCATION OF PROPOSED GEOPROBE TO BE CONDUCTED IN A FUTURE PHASE OF SUBSURFACE EXPLORATIONS AND CHEMICAL TESTING

WL-1 DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING DRILLED BY NORTHERN DRILL SERVICE, INC., OF NORTHBOROUGH, MASSACHUSETTS BETWEEN 27 JANUARY AND 10 FEBRUARY 2020 AND MONITORED BY A HALEY & ALDRICH STAFF GEOLOGIST

(OW) INDICATES GROUNDWATER OBSERVATION WELL INSTALLED IN COMPLETED TEST BORING

NOTE

1. BASE PLAN TAKEN FROM AN ELECTRONIC FILE TITLE "13907clo.dwg", PROVIDED BY NITSCH ENGINEERING ON 22 SEPTEMBER 2021.

0 80 160
SCALE IN FEET

HALEY ALDRICH

MIT WEST LOT
GRADUATE STUDENT HOUSING
269 TO 301 VASSAR STREET
CAMBRIDGE, MASSACHUSETTS

SITE AND SUBSURFACE EXPLORATION LOCATION PLAN

SCALE: AS SHOWN
NOVEMBER 2021

FIGURE 3

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APPROXIMATE LIMITS OF EXCAVATION AND CONSTRUCTION DEWATERING

PROPOSED DISCHARGE LOCATIONS

PROPOSED DISCHARGE ROUTE

OUTFALL D11OF0010

MIT WEST LOT
GRADUATE STUDENT HOUSING
269 TO 301 VASSAR STREET
CAMBRIDGE, MASSACHUSETTS

PROPOSED DISCHARGE ROUTE

SCALE: AS SHOWN
NOVEMBER 2021

FIGURE 4

CITY OF CAMBRIDGE
PUBLIC WORKS
SEWER DIVISION

SEWER & STORM DRAINS

2021 ATLAS

- Storm Runoff
- Sanitary Sewer
- Combined
- Abandoned
- MWRA
- Force Mains
- Over / Under
- Trench Drain
- SS Service
- SD Service
- Abandoned
- Catchbasin
- Drywell
- Area Drain
- Drop Inlet
- Oil / Water Separator
- Abandoned
- Outfall
- C.S.O.
- Underground Structures
- Pump Station
- Lift Station
- Storm Runoff Catchment Area
- City Line

CAMBRIDGE DEPARTMENT OF PUBLIC WORKS

ERVIN, DAYNA Printed: 11/5/2021 8:41 AM Layout: A016
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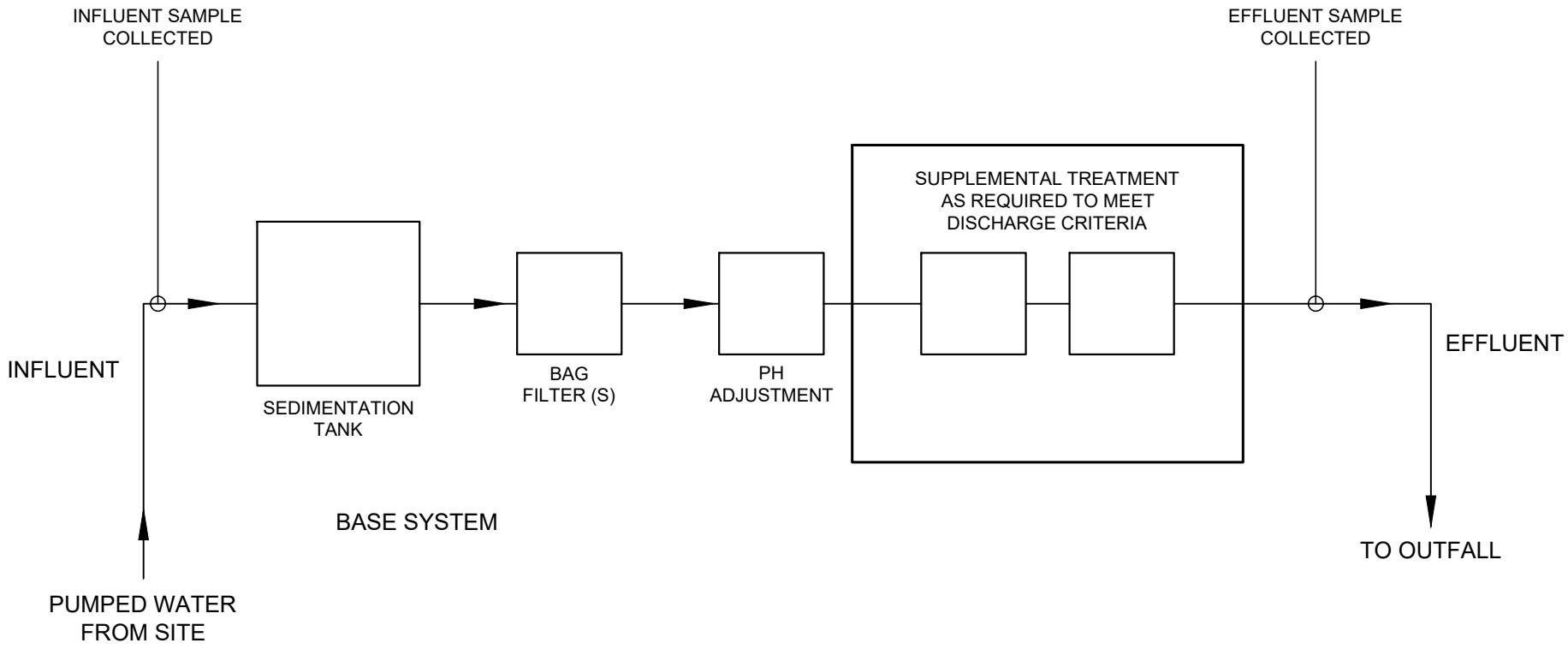

LEGEND

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 WEST LOT
GRADUATE STUDENT HOUSING
269 TO 301 VASSAR STREET
CAMBRIDGE, MASSACHUSETTS

PROPOSED TREATMENT SYSTEM SCHEMATIC

SCALE: AS SHOWN
NOVEMBER 2021

FIGURE 5

APPENDIX A

Notice of Intent (NOI)

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

A. General site information:

<table>
<tr><td rowspan="2">1. Name of site:
Massachusetts Institute of Technology West Lot</td><td colspan="3">Site address: 269 to 301 Vassar Street
Street: Vassar 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: Louis DiBerardinis</td></tr>
<tr><td colspan="2">Telephone: 617-253-9389</td><td>Email:</td></tr>
<tr><td colspan="3">Mailing address: 265 Massachusetts Avenue, 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
John Moriarty & Associates</td><td colspan="3">Contact Person: Josh Snyder</td></tr>
<tr><td colspan="2">Telephone: 781-729-3900</td><td>Email: jsnyder@gm-a.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: 3 Church Street</td></tr>
<tr><td>City: Winchester</td><td>State: MA</td><td>Zip: 01890</td></tr>
<tr><td>4. NPDES permit number assigned by EPA:
Not applicable

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):
3-19125,3-20017,3-19155, and 3-37131
☐ NH Groundwater Management Permit or Groundwater Release Detection Permit:
☐ CERCLA
☐ UIC Program
☐ POTW Pretreatment
☐ CWA Section 404</td></tr>
</table>

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
Charles River	MA72-38	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 in the 2016 MA Integrated List, all uses impaired. TMDLs for for Pathogens and Nutrients (32371 and 33826).

4. Indicate the seven day-ten-year low flow (7Q10) of the receiving water determined in accordance with the instructions in Appendix V for sites located in Massachusetts and Appendix VI for sites located in New Hampshire.	24.7 cfs
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.	75.1

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: TBD

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:	
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): Charles River (MA72-36) Outfall Location No. D11OF0010	Outfall location(s): (Latitude, Longitude) 42.35288, -71.10510
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 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: 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): January 2022 to January 2024 Indicate if the discharge is expected to occur over a duration of: ☐ less than 12 months ■ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

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

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

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

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✔	1	121,4500N	75	3520	3520	Report mg/L	---
Chloride		✔	1	44,300.0	25000	1730000	1730000	Report µg/l	---
Total Residual Chlorine	✔		1	121,4500C	20	< 20	< 20	0.2 mg/L	826
Total Suspended Solids		✔	1	121,2540D	5000	97000	97000	30 mg/L	---
Antimony	✔		1	3,200.8	4	< 4	< 4	206 µg/L	48047
Arsenic		✔	2	3,200.8	1	6.52	6.52	104 µg/L	751
Cadmium	✔		2	3,200.8	0.2	< 0.2	< 0.2	10.2 µg/L	13.7087
Chromium III		✔	2	3,200.8	10	6.9	6.9	323 µg/L	4188.2
Chromium VI	✔		1	1,7196A	1	< 10	< 10	323 µg/L	858.4
Copper		✔	1	3,200.8	1	8.04	8.04	242 µg/L	248.6
Iron		✔	1	19,200.7	50	8550	8550	5,000 µg/L	25519
Lead		✔	2	3,200.8	1	1.98	1.98	160 µg/L	1.62
Mercury	✔		2	3,245.1	0.2	< 0.2	< 0.2	0.739 µg/L	68.01
Nickel		✔	1	3,200.8	2	5.12	5.12	1,450 µg/L	2498.9
Selenium	✔		2	3,200.8	5	< 5	< 5	235.8 µg/L	375.4
Silver	✔		2	3,200.8	0.4	< 0.4	< 0.4	35.1 µg/L	114.0
Zinc		✔	1	3,200.8	10	29.71	29.71	420 µg/L	4016.8
Cyanide	✔		1	121,4500C	5	< 5	< 5	178 mg/L	390.4
B. Non-Halogenated VOCs									
Total BTEX	✔		1	128,624.1		<1	<1	100 µg/L	---
Benzene	✔		1	128,624.1	1	< 1	< 1	5.0 µg/L	---
1,4 Dioxane	✔		1	128,624.1-	5	< 5	< 5	200 µg/L	---
Acetone	✔		1	128,624.1	10	< 10	< 10	7.97 mg/L	---
Phenol	✔		1	4,420.1	30	< 30	< 30	1,080 µg/L	22522

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
C. Halogenated VOCs									
Carbon Tetrachloride	✔		1	128,624.1	1	< 1	< 1	4.4 µg/L	120.1
1,2 Dichlorobenzene	✔		1	128,624.1	5	< 5	< 5	600 µg/L	---
1,3 Dichlorobenzene	✔		1	128,624.1	5	< 5	< 5	320 µg/L	---
1,4 Dichlorobenzene	✔		1	128,624.1	5	< 5	< 5	5.0 µg/L	---
Total dichlorobenzene	✔		1	128,624.1	5	<5	<5	763 µg/L in NH	---
1,1 Dichloroethane	✔		1	128,624.1	1.5	< 1.5	< 1.5	70 µg/L	---
1,2 Dichloroethane	✔		1	128,624.1	1.5	< 1.5	< 1.5	5.0 µg/L	---
1,1 Dichloroethylene	✔		1	128,624.1	1	< 1	< 1	3.2 µg/L	---
Ethylene Dibromide	✔		1	14,504.1	0.01	< 0.01	< 0.01	0.05 µg/L	---
Methylene Chloride	✔		1	128,624.1	1	< 1	< 1	4.6 µg/L	---
1,1,1 Trichloroethane	✔		1	128,624.1	2	< 2	< 2	200 µg/L	---
1,1,2 Trichloroethane	✔		1	128,624.1	1.5	< 1.5	< 1.5	5.0 µg/L	---
Trichloroethylene	✔		1	128,624.1	1	< 1	< 1	5.0 µg/L	---
Tetrachloroethylene	✔		1	128,624.1	1	< 1	< 1	5.0 µg/L	247.7
cis-1,2 Dichloroethylene	✔		1	128,624.1	1	< 1	< 1	70 µg/L	---
Vinyl Chloride	✔		1	128,624.1	1	< 1	< 1	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔		1	129, 625.1	5	<5	<5	190 µg/L	---
Diethylhexyl phthalate	✔		1	129,625.1	2.2	< 2.2	<2.2	101 µg/L	165.2
Total Group I PAHs	✔		1	129,625.1	0.1	<0.1	<0.1	1.0 µg/L	---
Benzo(a)anthracene	✔		1	129,625.1-	0.1	< 0.1	< 0.1	As Total PAHs	0.2853
Benzo(a)pyrene	✔		1	129,625.1-	0.1	< 0.1	< 0,1		0.2853
Benzo(b)fluoranthene	✔		1	129,625.1-	0.1	< 0.1	< 0.1		0.2853
Benzo(k)fluoranthene	✔		1	129,625.1-	0.1	< 0.1	< 0.1		0.2853
Chrysene	✔		1	129,625.1-	0.1	< 0.1	< 0.1		0.2853
Dibenzo(a,h)anthracene	✔		1	129,625.1-	0.1	< 0.1	< 0.1		0.2853
Indeno(1,2,3-cd)pyrene	✔		1	129,625.1-	0.1	< 0.1	< 0.1		0.2853

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
Total Group II PAHs	✔		1	129,625.1	0.1	<0.1	<0.1	100 µg/L	---
Naphthalene	✔		1	129,625.1-	0.1	< 0.1	< 0.1	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔		1	127,608.3	0.25	< 0.25	< 0.25	0.000064 µg/L	---
Pentachlorophenol	✔		1	129,625.1-	1	< 1	< 1	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✔		1	140,1664B	3600	< 3600	< 3600	5.0 mg/L	---
Ethanol	✔		1	600,1617A	20000	< 20000	< 2000	Report mg/L	---
Methyl-tert-Butyl Ether	✔		1	128,624.1	10	< 10	< 10	70 µg/L	1501
tert-Butyl Alcohol	✔		1	128,624.1	100	< 100	< 100	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔		1	128,624.1	20	< 20	< 20	90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC_{50}, additional pollutants present); if so, specify:									
Hardness		✔	1	19,200.7	660	533000	533000		
pH		✔	1	1,9040C	NA	6.8	6.5		
* See attached table for									
additional compounds									
detected in soil.									

E. Treatment system information

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

☐ Adsorption/Absorption ☐ Advanced Oxidation Processes ☐ Air Stripping ☐ Granulated Activated Carbon ("GAC")/Liquid Phase Carbon Adsorption

☐ Ion Exchange ☐ Precipitation/Coagulation/Flocculation ■ Separation/Filtration ■ Other; if so, specify:

pH adjustment, other treatment as required to meet effluent limitations .

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

Prior to discharge, collected water is routed through a sedimentation tank and bag filters to remove suspended solids and undissolved chemical constituents. Additional treatment will include pH adjustment, as needed to meet necessary effluent limits established by permit.

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: pH adjustment

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: Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	150 GPM
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:
The site contractor has not yet submitted their construction dewatering submittal which will include details of the proposed treatment system along with Safety Data Sheets (SDSs).

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

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

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

G. Endangered Species Act eligibility determination

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

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

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

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

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

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

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

H. National Historic Preservation Act eligibility determination

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

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

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

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

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

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

I. Supplemental information

Describe any supplemental information being provided with the NOI. Include attachments if required or otherwise necessary.
Refer to attached Haley & Aldrich, Inc. letter.

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

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

J. Certification requirement

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

BMPP certification statement: A BMPP meeting the requirements of this general permit will be implemented upon initiation of discharge and available for review at the site.	
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ■ No ☐
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐ NA ☐
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ■ No ☐ NA ☐
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Check one: Yes ☐ No ☐ NA ■
Signature: Louis DiBerardinis	Date: 11/18/2021
Print Name and Title: Louis DiBerardinis, Director EHS Office, MIT	

J. Certification requirement

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

BMPP certification statement: A BMPP meeting the requirements of this general permit will be implemented upon initiation of discharge and available for review at the site.	
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ■ No ☐
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐ NA ☐
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ■ No ☐ NA ☐
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Check one: Yes ☐ No ☐ NA ■
Signature:	Date: 11/21/2021
Print Name and Title: Josh Snyder, John Moriarty & Associates	

PARAMETERS DETECTED IN SOIL

Inorganics
Antimony
Arsenic*
Barium
Beryllium
Cadmium
Chromium*
Lead*
Mercury
Nickel*
Selenium
Silver
Vanadium
Zinc*

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

Halogenated VOCs
Tetrachloroethene

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

Halogenated SVOCs
PCBs

Fuel Parameters
Petroleum hydrocarbons

**Compound also detected in groundwater*

APPENDIX B

Laboratory Data Reports

ANALYTICAL REPORT

Lab Number:	L2156742
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Scott Goldkamp
Phone:	(617) 886-7458
Project Name:	MIT WEST LOT
Project Number:	134487-005
Report Date:	10/22/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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

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

Project Name: MIT WEST LOT
Project Number: 134487-005

Lab Number: L2156742
Report Date: 10/22/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2156742-01	GP-2(OW)-2021-1015	WATER	CAMBRIDGE, MA	10/15/21 10:40	10/15/21
L2156742-02	MIT WEST LOT-RW-2021-1015	WATER	CAMBRIDGE, MA	10/15/21 12:40	10/15/21

Project Name:	MIT WEST LOT	**Lab Number:**	L2156742
Project Number:	134487-005	**Report Date:**	10/22/21

Case Narrative

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

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

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

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

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

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

Project Name: MIT WEST LOT
Project Number: 134487-005
Lab Number: L2156742
Report Date: 10/22/21

Case Narrative (continued)

Report Submission

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.

Volatile Organics by Method 624

The WG1560332-3 LCS recoveries, associated with L2156742-01, is above the acceptance criteria for ethylbenzene (145%), 1,2-dichlorobenzene (140%), 1,3-dichlorobenzene (140%), and 1,4-dichlorobenzene (145%); however, the associated sample is non-detect to the RL for these target analytes. The results of the original analysis are reported.

Volatile Organics by SIM

L2156742-01, WG1560335-4, and WG1560335-3: The surrogate recovery for 4-bromofluorobenzene (30%, 30%, and 29%, respectively) is outside the acceptance criteria; however, this surrogate is not associated with the reported target compound. Therefore, re-analysis was not required.

WG1560335-3: One or more of the internal standard recoveries is outside the acceptance criteria; however, the internal standard is within criteria for the target compound; therefore, the results are reported.

Microextractables

The WG1559921-2 LCS recovery for 1,2-dibromoethane (74%), associated with L2156742-01, is outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

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

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative Date: 10/22/21

ORGANICS

VOLATILES

Project Name: MIT WEST LOT
Project Number: 134487-005
Lab Number: L2156742
Report Date: 10/22/21

SAMPLE RESULTS

Lab ID: L2156742-01
Client ID: GP-2(OW)-2021-1015
Sample Location: CAMBRIDGE, MA
Date Collected: 10/15/21 10:40
Date Received: 10/15/21
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 10/18/21 12:14
Analyst: MKS

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

Project Name: MIT WEST LOT **Lab Number:** L2156742

Project Number: 134487-005 **Report Date:** 10/22/21

SAMPLE RESULTS

Lab ID: L2156742-01 Date Collected: 10/15/21 10:40

Client ID: GP-2(OW)-2021-1015 Date Received: 10/15/21

Sample Location: CAMBRIDGE, MA Field Prep: None

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	84		60-140
Fluorobenzene	99		60-140
4-Bromofluorobenzene	111		60-140

Project Name: MIT WEST LOT
Lab Number: L2156742
Project Number: 134487-005
Report Date: 10/22/21

SAMPLE RESULTS

Lab ID: L2156742-01
Client ID: GP-2(OW)-2021-1015
Sample Location: CAMBRIDGE, MA
Date Collected: 10/15/21 10:40
Date Received: 10/15/21
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1-SIM
Analytical Date: 10/18/21 12:14
Analyst: MKS

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	103		60-140
4-Bromofluorobenzene	**30**	Q	60-140

Project Name: MIT WEST LOT
Project Number: 134487-005
Lab Number: L2156742
Report Date: 10/22/21

SAMPLE RESULTS

Lab ID: L2156742-01
Client ID: GP-2(OW)-2021-1015
Sample Location: CAMBRIDGE, MA

Date Collected: 10/15/21 10:40
Date Received: 10/15/21
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 10/18/21 20:42
Analyst: GT

Extraction Method: EPA 504.1
Extraction Date: 10/18/21 11:35

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
1,2,3-Trichloropropane	ND		ug/l	0.030	--	1	A

Project Name: MIT WEST LOT
Project Number: 134487-005
Lab Number: L2156742
Report Date: 10/22/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 10/18/21 19:52
Analyst: GT

Extraction Method: EPA 504.1
Extraction Date: 10/18/21 11:35

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG1559921-1						
1,2-Dibromoethane	ND		ug/l	0.010	--	A
1,2-Dibromo-3-chloropropane	ND		ug/l	0.010	--	A
1,2,3-Trichloropropane	ND		ug/l	0.030	--	A

Project Name: MIT WEST LOT
Project Number: 134487-005
Lab Number: L2156742
Report Date: 10/22/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 10/18/21 10:27
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1560332-4					
Methylene chloride	ND		ug/l	1.0	--
1,1-Dichloroethane	ND		ug/l	1.5	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.5	--
Tetrachloroethene	ND		ug/l	1.0	--
1,2-Dichloroethane	ND		ug/l	1.5	--
1,1,1-Trichloroethane	ND		ug/l	2.0	--
Benzene	ND		ug/l	1.0	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--
1,2-Dichlorobenzene	ND		ug/l	5.0	--
1,3-Dichlorobenzene	ND		ug/l	5.0	--
1,4-Dichlorobenzene	ND		ug/l	5.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
Acetone	ND		ug/l	10	--
Methyl tert butyl ether	ND		ug/l	10	--
Tert-Butyl Alcohol	ND		ug/l	100	--
Tertiary-Amyl Methyl Ether	ND		ug/l	20	--

Project Name: MIT WEST LOT
Project Number: 134487-005
Lab Number: L2156742
Report Date: 10/22/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 10/18/21 10:27
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1560332-4					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	85		60-140
Fluorobenzene	99		60-140
4-Bromofluorobenzene	113		60-140

Project Name: MIT WEST LOT
Project Number: 134487-005
Lab Number: L2156742
Report Date: 10/22/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1-SIM
Analytical Date: 10/18/21 10:27
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1560335-4					
1,4-Dioxane	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	104		60-140
4-Bromofluorobenzene	**30**	Q	60-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT WEST LOT

Project Number: 134487-005

Lab Number: L2156742

Report Date: 10/22/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 Batch: WG1559921-2									
1,2-Dibromoethane	**74**	Q	-		80-120	-			A
1,2-Dibromo-3-chloropropane	90		-		80-120	-			A
1,2,3-Trichloropropane	89		-		80-120	-			A

Lab Control Sample Analysis
Batch Quality Control

Project Name: MIT WEST LOT
Project Number: 134487-005

Lab Number: L2156742
Report Date: 10/22/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1560332-3								
Methylene chloride	90		-		60-140	-		28
1,1-Dichloroethane	85		-		50-150	-		49
Carbon tetrachloride	80		-		70-130	-		41
1,1,2-Trichloroethane	100		-		70-130	-		45
Tetrachloroethene	95		-		70-130	-		39
1,2-Dichloroethane	80		-		70-130	-		49
1,1,1-Trichloroethane	85		-		70-130	-		36
Benzene	115		-		65-135	-		61
Toluene	115		-		70-130	-		41
Ethylbenzene	**145**	Q	-		60-140	-		63
Vinyl chloride	75		-		5-195	-		66
1,1-Dichloroethene	100		-		50-150	-		32
cis-1,2-Dichloroethene	105		-		60-140	-		30
Trichloroethene	110		-		65-135	-		48
1,2-Dichlorobenzene	**140**	Q	-		65-135	-		57
1,3-Dichlorobenzene	**140**	Q	-		70-130	-		43
1,4-Dichlorobenzene	**145**	Q	-		65-135	-		57
p/m-Xylene	140		-		60-140	-		30
o-xylene	130		-		60-140	-		30
Acetone	90		-		40-160	-		30
Methyl tert butyl ether	90		-		60-140	-		30
Tert-Butyl Alcohol	100		-		60-140	-		30
Tertiary-Amyl Methyl Ether	90		-		60-140	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT WEST LOT

Project Number: 134487-005

Lab Number: L2156742

Report Date: 10/22/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1560332-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	90				60-140
Fluorobenzene	104				60-140
4-Bromofluorobenzene	113				60-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT WEST LOT

Project Number: 134487-005

Lab Number: L2156742

Report Date: 10/22/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1560335-3								
1,4-Dioxane	128		-		60-140	-		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Fluorobenzene	107				60-140
4-Bromofluorobenzene	**29**	Q			60-140

Matrix Spike Analysis

Batch Quality Control

Project Name: MIT WEST LOT

Project Number: 134487-005

Lab Number: L2156742

Report Date: 10/22/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1559921-3 QC Sample: L2155982-03 Client ID: MS Sample													
1,2-Dibromoethane	ND	0.249	0.195	**78**	Q	-	-		80-120	-		20	A
1,2-Dibromo-3-chloropropane	ND	0.249	0.316	**127**	Q	-	-		80-120	-		20	A
1,2,3-Trichloropropane	ND	0.249	0.278	112		-	-		80-120	-		20	A

SEMIVOLATILES

Project Name: MIT WEST LOT
Project Number: 134487-005
Lab Number: L2156742
Report Date: 10/22/21

SAMPLE RESULTS

Lab ID: L2156742-01
Client ID: GP-2(OW)-2021-1015
Sample Location: CAMBRIDGE, MA

Date Collected: 10/15/21 10:40
Date Received: 10/15/21
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 10/19/21 16:35
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 10/18/21 01:09

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	65		42-122
2-Fluorobiphenyl	68		46-121
4-Terphenyl-d14	82		47-138

Project Name: MIT WEST LOT
Project Number: 134487-005
Lab Number: L2156742
Report Date: 10/22/21

SAMPLE RESULTS

Lab ID: L2156742-01
Client ID: GP-2(OW)-2021-1015
Sample Location: CAMBRIDGE, MA

Date Collected: 10/15/21 10:40
Date Received: 10/15/21
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1-SIM
Analytical Date: 10/19/21 01:39
Analyst: RP

Extraction Method: EPA 625.1
Extraction Date: 10/18/21 01:14

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	55		25-87
Phenol-d6	44		16-65
Nitrobenzene-d5	90		42-122
2-Fluorobiphenyl	78		46-121
2,4,6-Tribromophenol	125		45-128
4-Terphenyl-d14	84		47-138

Project Name: MIT WEST LOT
Project Number: 134487-005
Lab Number: L2156742
Report Date: 10/22/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 10/18/21 14:57
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 10/18/21 01:09

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1559760-1					
Bis(2-ethylhexyl)phthalate	ND		ug/l	2.20	--
Butyl benzyl phthalate	ND		ug/l	5.00	--
Di-n-butylphthalate	ND		ug/l	5.00	--
Di-n-octylphthalate	ND		ug/l	5.00	--
Diethyl phthalate	ND		ug/l	5.00	--
Dimethyl phthalate	ND		ug/l	5.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	95		42-122
2-Fluorobiphenyl	96		46-121
4-Terphenyl-d14	100		47-138

Project Name: MIT WEST LOT
Project Number: 134487-005
Lab Number: L2156742
Report Date: 10/22/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1-SIM
Analytical Date: 10/19/21 00:17
Analyst: DV

Extraction Method: EPA 625.1
Extraction Date: 10/18/21 01:14

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1559762-1					
Acenaphthene	ND		ug/l	0.100	--
Fluoranthene	ND		ug/l	0.100	--
Naphthalene	ND		ug/l	0.100	--
Benzo(a)anthracene	ND		ug/l	0.100	--
Benzo(a)pyrene	ND		ug/l	0.100	--
Benzo(b)fluoranthene	ND		ug/l	0.100	--
Benzo(k)fluoranthene	ND		ug/l	0.100	--
Chrysene	ND		ug/l	0.100	--
Acenaphthylene	ND		ug/l	0.100	--
Anthracene	ND		ug/l	0.100	--
Benzo(ghi)perylene	ND		ug/l	0.100	--
Fluorene	ND		ug/l	0.100	--
Phenanthrene	ND		ug/l	0.100	--
Dibenzo(a,h)anthracene	ND		ug/l	0.100	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.100	--
Pyrene	ND		ug/l	0.100	--
Pentachlorophenol	ND		ug/l	1.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	58		25-87
Phenol-d6	46		16-65
Nitrobenzene-d5	89		42-122
2-Fluorobiphenyl	78		46-121
2,4,6-Tribromophenol	108		45-128
4-Terphenyl-d14	83		47-138

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT WEST LOT

Project Number: 134487-005

Lab Number: L2156742

Report Date: 10/22/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1559760-3								
Bis(2-ethylhexyl)phthalate	97		-		29-137	-		82
Butyl benzyl phthalate	104		-		1-140	-		60
Di-n-butylphthalate	101		-		8-120	-		47
Di-n-octylphthalate	100		-		19-132	-		69
Diethyl phthalate	96		-		1-120	-		100
Dimethyl phthalate	98		-		1-120	-		183

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	91				42-122
2-Fluorobiphenyl	96				46-121
4-Terphenyl-d14	105				47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: MIT WEST LOT
Project Number: 134487-005

Lab Number: L2156742
Report Date: 10/22/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1559762-2								
Acenaphthene	79		-		60-132	-		30
Fluoranthene	87		-		43-121	-		30
Naphthalene	77		-		36-120	-		30
Benzo(a)anthracene	81		-		42-133	-		30
Benzo(a)pyrene	85		-		32-148	-		30
Benzo(b)fluoranthene	90		-		42-140	-		30
Benzo(k)fluoranthene	79		-		25-146	-		30
Chrysene	80		-		44-140	-		30
Acenaphthylene	84		-		54-126	-		30
Anthracene	83		-		43-120	-		30
Benzo(ghi)perylene	84		-		1-195	-		30
Fluorene	84		-		70-120	-		30
Phenanthrene	78		-		65-120	-		30
Dibenzo(a,h)anthracene	88		-		1-200	-		30
Indeno(1,2,3-cd)pyrene	93		-		1-151	-		30
Pyrene	87		-		70-120	-		30
Pentachlorophenol	56		-		38-152	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT WEST LOT

Project Number: 134487-005

Lab Number: L2156742

Report Date: 10/22/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1559762-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	55				25-87
Phenol-d6	44				16-65
Nitrobenzene-d5	80				42-122
2-Fluorobiphenyl	70				46-121
2,4,6-Tribromophenol	100				45-128
4-Terphenyl-d14	73				47-138

PCBS

Project Name: MIT WEST LOT
Project Number: 134487-005
Lab Number: L2156742
Report Date: 10/22/21

SAMPLE RESULTS

Lab ID: L2156742-01
Client ID: GP-2(OW)-2021-1015
Sample Location: CAMBRIDGE, MA

Date Collected: 10/15/21 10:40
Date Received: 10/15/21
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 10/21/21 09:28
Analyst: JM

Extraction Method: EPA 608.3
Extraction Date: 10/20/21 20:35
Cleanup Method: EPA 3665A
Cleanup Date: 10/21/21
Cleanup Method: EPA 3660B
Cleanup Date: 10/21/21

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64		37-123	B
Decachlorobiphenyl	62		38-114	B
2,4,5,6-Tetrachloro-m-xylene	66		37-123	A
Decachlorobiphenyl	74		38-114	A

Project Name: MIT WEST LOT
Project Number: 134487-005
Lab Number: L2156742
Report Date: 10/22/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 127,608.3
Analytical Date: 10/21/21 08:05
Analyst: JM

Extraction Method: EPA 608.3
Extraction Date: 10/20/21 20:35
Cleanup Method: EPA 3665A
Cleanup Date: 10/21/21
Cleanup Method: EPA 3660B
Cleanup Date: 10/21/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG1561184-1						
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	66		37-123	B
Decachlorobiphenyl	52		38-114	B
2,4,5,6-Tetrachloro-m-xylene	73		37-123	A
Decachlorobiphenyl	66		38-114	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT WEST LOT

Project Number: 134487-005

Lab Number: L2156742

Report Date: 10/22/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG1561184-2									
Aroclor 1016	62		-		50-140	-		36	A
Aroclor 1260	62		-		8-140	-		38	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	49				37-123	B
Decachlorobiphenyl	45				38-114	B
2,4,5,6-Tetrachloro-m-xylene	52				37-123	A
Decachlorobiphenyl	57				38-114	A

METALS

Project Name: MIT WEST LOT
Lab Number: L2156742
Project Number: 134487-005
Report Date: 10/22/21

SAMPLE RESULTS

Lab ID: L2156742-01
Client ID: GP-2(OW)-2021-1015
Sample Location: CAMBRIDGE, MA
Date Collected: 10/15/21 10:40
Date Received: 10/15/21
Field Prep: None

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	533		mg/l	0.660	NA	1	10/21/21 09:25	10/21/21 14:18	EPA 3005A	19,200.7	SV

Project Name: MIT WEST LOT
Lab Number: L2156742
Project Number: 134487-005
Report Date: 10/22/21

SAMPLE RESULTS

Lab ID: L2156742-02
Client ID: MIT WEST LOT-RW-2021-1015
Sample Location: CAMBRIDGE, MA
Date Collected: 10/15/21 12:40
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	10/21/21 09:25	10/21/21 17:02	EPA 3005A	3,200.8	WP
Arsenic, Total	ND		mg/l	0.00100	--	1	10/21/21 09:25	10/21/21 17:02	EPA 3005A	3,200.8	WP
Cadmium, Total	ND		mg/l	0.00020	--	1	10/21/21 09:25	10/21/21 17:02	EPA 3005A	3,200.8	WP
Chromium, Total	ND		mg/l	0.00100	--	1	10/21/21 09:25	10/21/21 17:02	EPA 3005A	3,200.8	WP
Copper, Total	0.00265		mg/l	0.00100	--	1	10/21/21 09:25	10/21/21 17:02	EPA 3005A	3,200.8	WP
Iron, Total	0.669		mg/l	0.050	--	1	10/21/21 09:25	10/21/21 14:22	EPA 3005A	19,200.7	SV
Lead, Total	0.00532		mg/l	0.00100	--	1	10/21/21 09:25	10/21/21 17:02	EPA 3005A	3,200.8	WP
Mercury, Total	ND		mg/l	0.00020	--	1	10/21/21 10:10	10/21/21 13:31	EPA 245.1	3,245.1	AC
Nickel, Total	ND		mg/l	0.00200	--	1	10/21/21 09:25	10/21/21 17:02	EPA 3005A	3,200.8	WP
Selenium, Total	ND		mg/l	0.00500	--	1	10/21/21 09:25	10/21/21 17:02	EPA 3005A	3,200.8	WP
Silver, Total	ND		mg/l	0.00040	--	1	10/21/21 09:25	10/21/21 17:02	EPA 3005A	3,200.8	WP
Zinc, Total	0.02321		mg/l	0.01000	--	1	10/21/21 09:25	10/21/21 17:02	EPA 3005A	3,200.8	WP
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	52.4		mg/l	0.660	NA	1	10/21/21 09:25	10/21/21 14:22	EPA 3005A	19,200.7	SV

Project Name: MIT WEST LOT
Project Number: 134487-005
Lab Number: L2156742
Report Date: 10/22/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02 Batch: WG1561392-1										
Antimony, Total	ND		mg/l	0.00400	--	1	10/21/21 09:25	10/21/21 16:20	3,200.8	WP
Arsenic, Total	ND		mg/l	0.00100	--	1	10/21/21 09:25	10/21/21 16:20	3,200.8	WP
Cadmium, Total	ND		mg/l	0.00020	--	1	10/21/21 09:25	10/21/21 16:20	3,200.8	WP
Chromium, Total	ND		mg/l	0.00100	--	1	10/21/21 09:25	10/21/21 16:20	3,200.8	WP
Copper, Total	ND		mg/l	0.00100	--	1	10/21/21 09:25	10/21/21 16:20	3,200.8	WP
Lead, Total	ND		mg/l	0.00100	--	1	10/21/21 09:25	10/21/21 16:20	3,200.8	WP
Nickel, Total	ND		mg/l	0.00200	--	1	10/21/21 09:25	10/21/21 16:20	3,200.8	WP
Selenium, Total	ND		mg/l	0.00500	--	1	10/21/21 09:25	10/21/21 16:20	3,200.8	WP
Silver, Total	ND		mg/l	0.00040	--	1	10/21/21 09:25	10/21/21 16:20	3,200.8	WP
Zinc, Total	ND		mg/l	0.01000	--	1	10/21/21 09:25	10/21/21 16:20	3,200.8	WP

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1561393-1										
Iron, Total	ND		mg/l	0.050	--	1	10/21/21 09:25	10/21/21 13:18	19,200.7	SV

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01-02 Batch: WG1561393-1										
Hardness	ND		mg/l	0.660	NA	1	10/21/21 09:25	10/21/21 13:18	19,200.7	SV

Prep Information

Digestion Method: EPA 3005A

Project Name: MIT WEST LOT
Project Number: 134487-005
Lab Number: L2156742
Report Date: 10/22/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02 Batch: WG1561394-1										
Mercury, Total	ND		mg/l	0.00020	--	1	10/21/21 10:10	10/21/21 12:58	3,245.1	AC

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT WEST LOT

Project Number: 134487-005

Lab Number: L2156742

Report Date: 10/22/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 Batch: WG1561392-2								
Antimony, Total	92		-		85-115	-		
Arsenic, Total	106		-		85-115	-		
Cadmium, Total	100		-		85-115	-		
Chromium, Total	99		-		85-115	-		
Copper, Total	103		-		85-115	-		
Lead, Total	104		-		85-115	-		
Nickel, Total	98		-		85-115	-		
Selenium, Total	102		-		85-115	-		
Silver, Total	101		-		85-115	-		
Zinc, Total	98		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1561393-2								
Iron, Total	97		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 Batch: WG1561393-2								
Hardness	97		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 02 Batch: WG1561394-2								
Mercury, Total	94		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: MIT WEST LOT
Project Number: 134487-005

Lab Number: L2156742
Report Date: 10/22/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1561392-3 QC Sample: L2156734-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.5951	119		-	-		70-130	-		20
Arsenic, Total	0.00492	0.12	0.1355	109		-	-		70-130	-		20
Cadmium, Total	ND	0.053	0.05333	101		-	-		70-130	-		20
Chromium, Total	0.00171	0.2	0.1986	98		-	-		70-130	-		20
Copper, Total	0.00196	0.25	0.2466	98		-	-		70-130	-		20
Lead, Total	ND	0.53	0.5045	95		-	-		70-130	-		20
Nickel, Total	ND	0.5	0.4845	97		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1237	103		-	-		70-130	-		20
Silver, Total	ND	0.05	0.04983	100		-	-		70-130	-		20
Zinc, Total	0.01359	0.5	0.5051	98		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1561393-3 QC Sample: L2156734-01 Client ID: MS Sample												
Iron, Total	2.96	1	3.77	81		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1561393-3 QC Sample: L2156734-01 Client ID: MS Sample												
Hardness	441	66.2	483	**63**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1561394-3 QC Sample: L2156734-02 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00469	94		-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: MIT WEST LOT
Project Number: 134487-005

Lab Number: L2156742
Report Date: 10/22/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1561392-4 QC Sample: L2156734-01 Client ID: DUP Sample						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	0.00492	0.00455	mg/l	8		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	0.00171	0.00173	mg/l	1		20
Copper, Total	0.00196	0.00194	mg/l	1		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	0.01359	0.01304	mg/l	4		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1561393-4 QC Sample: L2156734-01 Client ID: DUP Sample						
Iron, Total	2.96	2.90	mg/l	2		20
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1561394-4 QC Sample: L2156734-02 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: MIT WEST LOT
Project Number: 134487-005
Lab Number: L2156742
Report Date: 10/22/21

SAMPLE RESULTS

Lab ID: L2156742-01
Client ID: GP-2(OW)-2021-1015
Sample Location: CAMBRIDGE, MA
Sample Depth:
Matrix: Water
Date Collected: 10/15/21 10:40
Date Received: 10/15/21
Field Prep: None

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	97.		mg/l	5.0	NA	1	-	10/20/21 14:00	121,2540D	AC
Cyanide, Total	ND		mg/l	0.005	--	1	10/21/21 11:00	10/22/21 11:54	121,4500CN-CE	JO
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	10/16/21 05:22	121,4500CL-D	KA
pH (H)	6.8		SU	-	NA	1	-	10/18/21 17:40	1,9040C	AS
Nitrogen, Ammonia	3.52		mg/l	0.075	--	1	10/19/21 08:00	10/19/21 21:18	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	3.60	--	.9	10/20/21 17:15	10/20/21 18:00	140,1664B	TL
Phenolics, Total	ND		mg/l	0.030	--	1	10/19/21 07:19	10/19/21 11:18	4,420.1	KP
Chromium, Hexavalent	ND		mg/l	0.010	--	1	10/16/21 00:39	10/16/21 00:43	1,7196A	VA
Anions by Ion Chromatography - Westborough Lab										
Chloride	1730		mg/l	25.0	--	50	-	10/20/21 20:38	44,300.0	SH

Project Name: MIT WEST LOT
Project Number: 134487-005

Lab Number: L2156742
Report Date: 10/22/21

SAMPLE RESULTS

Lab ID: L2156742-02
Client ID: MIT WEST LOT-RW-2021-1015
Sample Location: CAMBRIDGE, MA

Date Collected: 10/15/21 12:40
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	7.1		SU	-	NA	1	-	10/18/21 17:40	1,9040C	AS
Nitrogen, Ammonia	0.129		mg/l	0.075	--	1	10/19/21 08:00	10/19/21 21:19	121,4500NH3-BH	AT
Chromium, Hexavalent	ND		mg/l	0.010	--	1	10/16/21 00:39	10/16/21 00:44	1,7196A	VA

Project Name: MIT WEST LOT
Project Number: 134487-005
Lab Number: L2156742
Report Date: 10/22/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1559397-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	10/16/21 00:39	10/16/21 00:42	1,7196A	VA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1559428-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	10/16/21 05:22	121,4500CL-D	KA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1560259-1										
Phenolics, Total	ND		mg/l	0.030	--	1	10/19/21 07:19	10/19/21 11:04	4,420.1	KP
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1560316-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	10/19/21 08:00	10/19/21 21:13	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1561048-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	10/20/21 14:00	121,2540D	AC
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1561054-1										
TPH, SGT-HEM	ND		mg/l	4.00	--	1	10/20/21 17:15	10/20/21 18:00	140,1664B	TL
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1561195-1										
Chloride	ND		mg/l	0.500	--	1	-	10/20/21 16:38	44,300.0	SH
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1561413-1										
Cyanide, Total	ND		mg/l	0.005	--	1	10/21/21 11:00	10/22/21 11:31	121,4500CN-CE	JO

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT WEST LOT

Project Number: 134487-005

Lab Number: L2156742

Report Date: 10/22/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1559397-2								
Chromium, Hexavalent	104		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1559428-2								
Chlorine, Total Residual	104		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1560105-1								
pH	101		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1560259-2								
Phenolics, Total	104		-		70-130	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1560316-2								
Nitrogen, Ammonia	96		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1561048-2								
Solids, Total Suspended	98		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1561054-2								
TPH	72		-		64-132	-		34

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT WEST LOT

Project Number: 134487-005

Lab Number: L2156742

Report Date: 10/22/21

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1561195-2					
Chloride	98	-	90-110	-	
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1561413-2					
Cyanide, Total	92	-	90-110	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: MIT WEST LOT
Project Number: 134487-005

Lab Number: L2156742
Report Date: 10/22/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1559397-4 QC Sample: L2156742-02 Client ID: MIT WEST LOT-RW-2021-1015												
Chromium, Hexavalent	ND	0.1	0.103	103		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1559428-4 QC Sample: L2156565-02 Client ID: MS Sample												
Chlorine, Total Residual	ND	0.25	0.26	104		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1560259-4 QC Sample: L2154256-02 Client ID: MS Sample												
Phenolics, Total	ND	0.4	0.31	78		-	-		70-130	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1560316-4 QC Sample: L2153475-96 Client ID: MS Sample												
Nitrogen, Ammonia	0.358	4	4.12	94		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1561054-4 QC Sample: L2153475-107 Client ID: MS Sample												
TPH	ND	19.4	5.83	**30**	Q	-	-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1561195-3 QC Sample: L2155091-01 Client ID: MS Sample												
Chloride	16.6	4	20.2	**88**	Q	-	-		90-110	-		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1561413-3 QC Sample: L2157128-01 Client ID: MS Sample												
Cyanide, Total	0.007	0.2	0.211	102		-	-		90-110	-		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: MIT WEST LOT
Project Number: 134487-005

Lab Number: L2156742
Report Date: 10/22/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1559397-3 QC Sample: L2156742-01 Client ID: GP-2(OW)-2021-1015						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1559428-3 QC Sample: L2156565-01 Client ID: DUP Sample						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1560105-2 QC Sample: L2155939-01 Client ID: DUP Sample						
pH	7.4	7.4	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1560259-3 QC Sample: L2154256-02 Client ID: DUP Sample						
Phenolics, Total	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1560316-3 QC Sample: L2153475-96 Client ID: DUP Sample						
Nitrogen, Ammonia	0.358	0.430	mg/l	18		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1561048-3 QC Sample: L2156739-01 Client ID: DUP Sample						
Solids, Total Suspended	4400	3700	mg/l	17		29
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1561054-3 QC Sample: L2153475-106 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1561195-4 QC Sample: L2155091-01 Client ID: DUP Sample						
Chloride	16.6	16.7	mg/l	1		18

Lab Duplicate Analysis

Batch Quality Control

Project Name: MIT WEST LOT

Project Number: 134487-005

Lab Number: L2156742

Report Date: 10/22/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1561413-4 QC Sample: L2157130-01 Client ID: DUP Sample					
Cyanide, Total	0.007	0.006	mg/l	15	30

Project Name: MIT WEST LOT
Project Number: 134487-005

Lab Number: L2156742
Report Date: 10/22/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2156742-01A	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		624.1-SIM-RGP(7)
L2156742-01B	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		624.1-SIM-RGP(7)
L2156742-01C	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		624.1-SIM-RGP(7)
L2156742-01D	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		624.1-RGP(7)
L2156742-01E	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		624.1-RGP(7)
L2156742-01F	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		624.1-RGP(7)
L2156742-01G	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		504(14)
L2156742-01H	Vial Na2S2O3 preserved	B	NA		2.2	Y	Absent		504(14)
L2156742-01I	Vial unpreserved	B	NA		2.2	Y	Absent		SUB-ETHANOL(14)
L2156742-01J	Vial unpreserved	B	NA		2.2	Y	Absent		SUB-ETHANOL(14)
L2156742-01K	Vial unpreserved	B	NA		2.2	Y	Absent		SUB-ETHANOL(14)
L2156742-01L	Plastic 250ml unpreserved	B	7	7	2.2	Y	Absent		-
L2156742-01M	Plastic 250ml HNO3 preserved	B	<2	<2	2.2	Y	Absent		HARDU(180)
L2156742-01N	Plastic 250ml NaOH preserved	B	>12	>12	2.2	Y	Absent		TCN-4500(14)
L2156742-01O	Plastic 500ml H2SO4 preserved	B	<2	<2	2.2	Y	Absent		NH3-4500(28)
L2156742-01P	Plastic 950ml unpreserved	B	7	7	2.2	Y	Absent		HEXCR-7196(1),CL-300(28),PH-9040(1),TRC-4500(1)
L2156742-01Q	Plastic 950ml unpreserved	B	7	7	2.2	Y	Absent		TSS-2540(7)
L2156742-01R	Amber 950ml H2SO4 preserved	B	<2	<2	2.2	Y	Absent		TPHENOL-420(28)
L2156742-01S	Amber 1000ml Na2S2O3	B	7	7	2.2	Y	Absent		PCB-608.3(365)
L2156742-01T	Amber 1000ml Na2S2O3	B	7	7	2.2	Y	Absent		PCB-608.3(365)
L2156742-01U	Amber 1000ml Na2S2O3	B	7	7	2.2	Y	Absent		625.1-RGP(7)
L2156742-01V	Amber 1000ml Na2S2O3	B	7	7	2.2	Y	Absent		625.1-RGP(7)
L2156742-01W	Amber 1000ml Na2S2O3	B	7	7	2.2	Y	Absent		625.1-SIM-RGP(7)

*Values in parentheses indicate holding time in days

Project Name: MIT WEST LOT
Project Number: 134487-005

Lab Number: L2156742
Report Date: 10/22/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2156742-01X	Amber 1000ml Na2S2O3	B	7	7	2.2	Y	Absent		625.1-SIM-RGP(7)
L2156742-01X1	Plastic 120ml HNO3 preserved Filtrates	B	<2	<2	2.2	Y	Absent		HOLD-METAL-DISSOLVED(180)
L2156742-01Y	Amber 1000ml HCl preserved	B	NA		2.2	Y	Absent		TPH-1664(28)
L2156742-01Z	Amber 1000ml HCl preserved	B	NA		2.2	Y	Absent		TPH-1664(28)
L2156742-02A	Plastic 250ml unpreserved	B	7	7	2.2	Y	Absent		HEXCR-7196(1),PH-9040(1)
L2156742-02B	Plastic 250ml HNO3 preserved	B	<2	<2	2.2	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),HARDU(180),CU-2008T(180),FE-UI(180),SE-2008T(180),AG-2008T(180),AS-2008T(180),HG-U(28),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L2156742-02C	Plastic 500ml H2SO4 preserved	B	<2	<2	2.2	Y	Absent		NH3-4500(28)

*Values in parentheses indicate holding time in days

Project Name:	MIT WEST LOT	**Lab Number:**	L2156742
Project Number:	134487-005	**Report Date:**	10/22/21

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report

Project Name:	MIT WEST LOT	**Lab Number:**	L2156742
Project Number:	134487-005	**Report Date:**	10/22/21

Footnotes

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

Terms

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

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

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

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

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

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

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

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

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

Data Qualifiers

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

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

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

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

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

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

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

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

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

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

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

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

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

Report Format: Data Usability Report

Project Name:	MIT WEST LOT	**Lab Number:**	L2156742
Project Number:	134487-005	**Report Date:**	10/22/21

Data Qualifiers

the identification is based on a mass spectral library search.

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

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

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

Report Format: Data Usability Report

Project Name:	MIT WEST LOT	**Lab Number:**	L2156742
Project Number:	134487-005	**Report Date:**	10/22/21

REFERENCES

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

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

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

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

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

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

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

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

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

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

140 Method 1664,Revision B: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, EPA-821-R-10-001, February 2010.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

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

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

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

Westborough Facility:

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

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

Mansfield Facility:

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

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

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

CHAIN OF CUSTODY

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 10/15/21

ALPHA Job # L2156742

H&A Information

H&A Client: ACC Operating Partnership, LP
H&A Address: 465 Medford Street, Suite 2200
Boston, MA 02129
H&A Phone: 617-886-7380
H&A Fax: 617-886-7680
H&A Email: cmckenzie, sgoldkamp

Project Information

Project Name: MIT WEST LOT
Project Location: CAMBRIDGE, MA
Project #: 134487-005
(Use Project name as Project #) ☐
Project Manager: S. GOLDKAMP, C. MCKENZIE
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days: 5 Day

Deliverables

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

Billing Information

☐ Same as Client Info
PO #

Regulatory Requirements (Program/Criteria)

MA 2017 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:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Samples submitted for 2017 NPDES RGP application; please follow approved testing methods and minimum detection levels as required by EPA.

Please specify Metals or TAL.

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 Initials	Depth	1. VOCs 624.1 & 624.1-SIM	2. SVOCs 625.1 & 625.1-SIM	3. TSS 2540, TRC 4500, Cl 300, TCN	4. PCBs 608, EDB 504, TPHENOL, TPH 1664	5. Ammonia (NH3), Hex Cr, Hardness, pH	6. Ethanol	7. Total NPDES RGP Metals	8. NPDES RGP Metals (Lab Filtered) (ON HOLD)	Sample Specific Comments	Total Bottles
56742-01	GP-2(OW)-2021-1015	10/15/2021	1040	AQ	MSP	-	X	X	X	X	X	X	X	X	1. 1,4-Dioxane by 624.1-SIM	2
-02	MIT WEST LOT-RW-2021-1015	10/15/2021	1240	AQ	MSP	-					X		X		7. NPDES RGP Metals	3
															Includes: Ag, As, Cd, Cr, Tri C	
															Cu, Ni, Pb, Sb, Se, Zn, Fe, Hg	
															8. Lab Filtered NPDES RGP	
															Metals (ON HOLD)	

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
	10/15/21 1330		10/15/21 1700
	10/15/21 1700		10/15/21 1700
	10/15/21 1842		10/15/21 1842

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# 2019-22-Alpha Analytical by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and Alpha Analytical.

Document ID: 20455 Rev 3 (1/7/2019)

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

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

Alpha Job Number
L2156742

Client Information

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

Phone: 508.439.5176
Email: senright@alphalab.com

Project Information

Project Location: MA
Project Manager: Scott Enright

Turnaround & Deliverables Information

Due Date:
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:
Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2156742

Report to include Method Blank, LCS/LCSD:

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

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	GP-2(OW)-2021-1015	10-15-21 10:40	WATER	Ethanol by EPA 1671 Revision A	

Relinquished By:	Date/Time:	Received By:	Date/Time:
	10/18/21		

Form No: AL_subcoc

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

October 22, 2021

Scott Enright
Alpha Analytical
145 Flanders Road
Westborough, MA 01581
TEL: (508) 439-5176
FAX:

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

RE: L2156742 **WorkOrder:** 21101070

Dear Scott Enright:

TEKLAB, INC received 1 sample on 10/19/2021 10:36:00 AM for the analysis presented in the following report.

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

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

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

Sincerely,

Elizabeth A. Hurley

Elizabeth A. Hurley
Project Manager
(618)344-1004 ex 33
ehurley@teklabinc.com

Teklab, Inc.
Environmental Laboratory

Report Contents

http://www.teklabinc.com/

Client: Alpha Analytical
Client Project: L2156742

Work Order: 21101070
Report Date: 22-Oct-21

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	5
Accreditations	6
Laboratory Results	7
Quality Control Results	8
Receiving Check List	9
Chain of Custody	Appended

Teklab, Inc. Environmental Laboratory

Definitions

http://www.teklabinc.com/

Client: Alpha Analytical **Work Order:** 21101070

Client Project: L2156742 **Report Date:** 22-Oct-21

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

Teklab, Inc.
Environmental Laboratory

Definitions

http://www.teklabinc.com/

Client: Alpha Analytical

Work Order: 21101070

Client Project: L2156742

Report Date: 22-Oct-21

Qualifiers

- Unknown hydrocarbon

B - Analyte detected in associated Method Blank

C - RL shown is a Client Requested Quantitation Limit

E - Value above quantitation range

H - Holding times exceeded

I - Associated internal standard was outside method criteria

J - Analyte detected below quantitation limits

M - Manual Integration used to determine area response

ND - Not Detected at the Reporting Limit

R - RPD outside accepted recovery limits

S - Spike Recovery outside recovery limits

T - TIC(Tentatively identified compound)

X - Value exceeds Maximum Contaminant Level

Teklab, Inc.
Environmental Laboratory

Case Narrative

http://www.teklabinc.com/

Client: Alpha Analytical
Client Project: L2156742

Work Order: 21101070
Report Date: 22-Oct-21

Cooler Receipt Temp: 1.8 °C

Locations

Collinsville

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

Springfield

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

Kansas City

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

Collinsville Air

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

Chicago

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

Teklab, Inc. Environmental Laboratory

Accreditations

http://www.teklabinc.com/

Client: Alpha Analytical

Client Project: L2156742

Work Order: 21101070

Report Date: 22-Oct-21

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

Teklab, Inc. Environmental Laboratory

Laboratory Results

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 21101070
Client Project: L2156742
Report Date: 22-Oct-21
Lab ID: 21101070-001
Client Sample ID: GP-2(OW)-2021-1015
Matrix: AQUEOUS
Collection Date: 10/15/2021 10:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 600 1671A, PHARMACEUTICAL MANUFACTURING INDUSTRY NON-PURGEABLE VOLATILE ORGANICS								
Ethanol	*	20		**ND**	mg/L	1	10/20/2021 12:27	R301539

Teklab, Inc. Environmental Laboratory

Quality Control Results

http://www.teklabinc.com/

Client: Alpha Analytical

Client Project: L2156742

Work Order: 21101070

Report Date: 22-Oct-21

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

Batch R301539 **SampType:** MBLK Units **mg/L**
SampID: MBLK-102021

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	*	20		**ND**						10/20/2021

Batch R301539 **SampType:** LCS Units **mg/L**
SampID: LCS-102021

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	*	20		**270**	250.0	0	109.3	70	132	10/20/2021

Batch R301539 **SampType:** MS Units **mg/L**
SampID: 21100919-002AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	*	20		**270**	250.0	0	106.6	70	132	10/20/2021

Batch R301539 **SampType:** MSD Units **mg/L** RPD Limit: **30**
SampID: 21100919-002AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Ethanol	*	20		**260**	250.0	0	104.1	266.5	2.40	10/20/2021

Teklab, Inc.
Environmental Laboratory

Receiving Check List

http://www.teklabinc.com/

Client: Alpha Analytical
Client Project: L2156742

Work Order: 21101070
Report Date: 22-Oct-21

Carrier: UPS

Completed by: Marvin L. Darling II
On: 19-Oct-21
Marvin L. Darling

Received By: MEK

Reviewed by: Elizabeth A. Hurley
On: 19-Oct-21
Elizabeth A. Hurley

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

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 1.8
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		

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

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

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

2116070

Subcontract Chain of Custody

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

Alpha Job Number
L2156742

Client Information

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

Phone: 508.439.5176
Email: senright@alphalab.com

Project Information

Project Location: MA
Project Manager: Scott Enright

Turnaround & Deliverables Information

Due Date:
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:
Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2156742

Report to include Method Blank, LCS/LCSD:

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

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
2116070 - COC	GP-2(OW)-2021-1015	10-15-21 10:40	WATER	Ethanol by EPA 1671 Revision A	

1.8°C LTGT
HS in 2 of 3 vials
PR 10-19-21

	Relinquished By:	Date/Time:	Received By:	Date/Time:
		10/15/21	Mary Kemp (UPS)	10/19/21 1036
Form No: AL_subcoc				

PR 10-19-21

ANALYTICAL REPORT

Lab Number:	L2158218
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Scott Goldkamp
Phone:	(617) 886-7458
Project Name:	MIT WEST LOT
Project Number:	134487-005
Report Date:	10/26/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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

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

Project Name: MIT WEST LOT
Project Number: 134487-005

Lab Number: L2158218
Report Date: 10/26/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2158218-01	GP-2(OW)-2021-1015	WATER	CAMBRIDGE, MA	10/15/21 10:40	10/15/21

Project Name:	MIT WEST LOT	**Lab Number:**	L2158218
Project Number:	134487-005	**Report Date:**	10/26/21

Case Narrative

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

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

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

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

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

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

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: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 10/26/21

METALS

Project Name: MIT WEST LOT
Lab Number: L2158218
Project Number: 134487-005
Report Date: 10/26/21

SAMPLE RESULTS

Lab ID: L2158218-01
Client ID: GP-2(OW)-2021-1015
Sample Location: CAMBRIDGE, MA
Date Collected: 10/15/21 10:40
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	10/25/21 19:00	10/26/21 12:59	EPA 3005A	3,200.8	PS
Arsenic, Total	0.00652		mg/l	0.00100	--	1	10/25/21 19:00	10/26/21 12:59	EPA 3005A	3,200.8	PS
Cadmium, Total	ND		mg/l	0.00020	--	1	10/25/21 19:00	10/26/21 12:59	EPA 3005A	3,200.8	PS
Chromium, Total	0.00690		mg/l	0.00100	--	1	10/25/21 19:00	10/26/21 12:59	EPA 3005A	3,200.8	PS
Copper, Total	0.00804		mg/l	0.00100	--	1	10/25/21 19:00	10/26/21 12:59	EPA 3005A	3,200.8	PS
Iron, Total	8.55		mg/l	0.050	--	1	10/25/21 19:00	10/26/21 09:41	EPA 3005A	19,200.7	SV
Lead, Total	0.00198		mg/l	0.00100	--	1	10/25/21 19:00	10/26/21 12:59	EPA 3005A	3,200.8	PS
Mercury, Total	ND		mg/l	0.00020	--	1	10/25/21 21:40	10/26/21 08:57	EPA 245.1	3,245.1	AC
Nickel, Total	0.00512		mg/l	0.00200	--	1	10/25/21 19:00	10/26/21 12:59	EPA 3005A	3,200.8	PS
Selenium, Total	ND		mg/l	0.00500	--	1	10/25/21 19:00	10/26/21 12:59	EPA 3005A	3,200.8	PS
Silver, Total	ND		mg/l	0.00040	--	1	10/25/21 19:00	10/26/21 12:59	EPA 3005A	3,200.8	PS
Zinc, Total	0.02971		mg/l	0.01000	--	1	10/25/21 19:00	10/26/21 12:59	EPA 3005A	3,200.8	PS

Project Name: MIT WEST LOT
Project Number: 134487-005
Lab Number: L2158218
Report Date: 10/26/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1562839-1										
Antimony, Total	ND		mg/l	0.00400	--	1	10/25/21 19:00	10/26/21 12:10	3,200.8	PS
Arsenic, Total	ND		mg/l	0.00100	--	1	10/25/21 19:00	10/26/21 12:10	3,200.8	PS
Cadmium, Total	ND		mg/l	0.00020	--	1	10/25/21 19:00	10/26/21 12:10	3,200.8	PS
Chromium, Total	ND		mg/l	0.00100	--	1	10/25/21 19:00	10/26/21 12:10	3,200.8	PS
Copper, Total	ND		mg/l	0.00100	--	1	10/25/21 19:00	10/26/21 12:10	3,200.8	PS
Lead, Total	ND		mg/l	0.00100	--	1	10/25/21 19:00	10/26/21 12:10	3,200.8	PS
Nickel, Total	ND		mg/l	0.00200	--	1	10/25/21 19:00	10/26/21 12:10	3,200.8	PS
Selenium, Total	ND		mg/l	0.00500	--	1	10/25/21 19:00	10/26/21 12:10	3,200.8	PS
Silver, Total	ND		mg/l	0.00040	--	1	10/25/21 19:00	10/26/21 12:10	3,200.8	PS
Zinc, Total	ND		mg/l	0.01000	--	1	10/25/21 19:00	10/26/21 12:10	3,200.8	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: WG1562840-1										
Iron, Total	ND		mg/l	0.050	--	1	10/25/21 19:00	10/26/21 09:29	19,200.7	SV

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1562850-1										
Mercury, Total	ND		mg/l	0.00020	--	1	10/25/21 21:40	10/26/21 07:54	3,245.1	AC

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: MIT WEST LOT

Project Number: 134487-005

Lab Number: L2158218

Report Date: 10/26/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1562839-2								
Antimony, Total	85		-		85-115	-		
Arsenic, Total	98		-		85-115	-		
Cadmium, Total	99		-		85-115	-		
Chromium, Total	102		-		85-115	-		
Copper, Total	100		-		85-115	-		
Lead, Total	97		-		85-115	-		
Nickel, Total	97		-		85-115	-		
Selenium, Total	101		-		85-115	-		
Silver, Total	100		-		85-115	-		
Zinc, Total	98		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1562840-2								
Iron, Total	105		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1562850-2								
Mercury, Total	98		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: MIT WEST LOT
Project Number: 134487-005

Lab Number: L2158218
Report Date: 10/26/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1562839-3 QC Sample: L2157975-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.5358	107		-	-		70-130	-		20
Arsenic, Total	0.00353	0.12	0.1246	101		-	-		70-130	-		20
Cadmium, Total	ND	0.053	0.05337	101		-	-		70-130	-		20
Chromium, Total	ND	0.2	0.2058	103		-	-		70-130	-		20
Copper, Total	ND	0.25	0.2622	105		-	-		70-130	-		20
Lead, Total	ND	0.53	0.5340	101		-	-		70-130	-		20
Nickel, Total	ND	0.5	0.4977	100		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1218	102		-	-		70-130	-		20
Silver, Total	ND	0.05	0.05067	101		-	-		70-130	-		20
Zinc, Total	0.01362	0.5	0.5289	103		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1562839-5 QC Sample: L2157975-02 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.4464	89		-	-		70-130	-		20
Arsenic, Total	ND	0.12	0.1210	101		-	-		70-130	-		20
Cadmium, Total	ND	0.053	0.05589	105		-	-		70-130	-		20
Chromium, Total	ND	0.2	0.2123	106		-	-		70-130	-		20
Copper, Total	0.00281	0.25	0.2582	102		-	-		70-130	-		20
Lead, Total	ND	0.53	0.5434	102		-	-		70-130	-		20
Nickel, Total	ND	0.5	0.4986	100		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1214	101		-	-		70-130	-		20
Silver, Total	ND	0.05	0.05230	105		-	-		70-130	-		20
Zinc, Total	0.03590	0.5	0.5804	109		-	-		70-130	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: MIT WEST LOT
Project Number: 134487-005

Lab Number: L2158218
Report Date: 10/26/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1562840-3 QC Sample: L2157975-01 Client ID: MS Sample									
Iron, Total	7.76	1	8.60	84	-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1562850-3 QC Sample: L2157051-01 Client ID: MS Sample									
Mercury, Total	ND	0.005	0.00466	93	-	-	70-130	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: MIT WEST LOT

Project Number: 134487-005

Lab Number: L2158218

Report Date: 10/26/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1562839-4 QC Sample: L2157975-01 Client ID: DUP Sample						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	0.00353	0.00355	mg/l	1		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	ND	ND	mg/l	NC		20
Copper, Total	ND	ND	mg/l	NC		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	ND	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.01362	0.01303	mg/l	4		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: MIT WEST LOT
Project Number: 134487-005

Lab Number: L2158218
Report Date: 10/26/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1562839-6 QC Sample: L2157975-02 Client ID: DUP Sample					
Antimony, Total	ND	ND	mg/l	NC	20
Arsenic, Total	ND	ND	mg/l	NC	20
Cadmium, Total	ND	ND	mg/l	NC	20
Chromium, Total	ND	ND	mg/l	NC	20
Copper, Total	0.00281	0.00273	mg/l	3	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	0.03590	0.03508	mg/l	2	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1562840-4 QC Sample: L2157975-01 Client ID: DUP Sample					
Iron, Total	7.76	7.63	mg/l	2	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1562850-4 QC Sample: L2157051-01 Client ID: DUP Sample					
Mercury, Total	ND	ND	mg/l	NC	20

Project Name: MIT WEST LOT
Project Number: 134487-005

Lab Number: L2158218
Report Date: 10/26/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2158218-01A	Plastic 250ml HNO3 preserved	B	<2	<2	2.2	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),AS-2008T(180),HG-U(28),SE-2008T(180),AG-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)

*Values in parentheses indicate holding time in days

Project Name:	MIT WEST LOT	**Lab Number:**	L2158218
Project Number:	134487-005	**Report Date:**	10/26/21

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report

Project Name:	MIT WEST LOT	**Lab Number:**	L2158218
Project Number:	134487-005	**Report Date:**	10/26/21

Footnotes

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

Terms

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

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

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

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

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

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

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

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

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

Data Qualifiers

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

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

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

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

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

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

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

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

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

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

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

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

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

Report Format: Data Usability Report

Project Name:	MIT WEST LOT	**Lab Number:**	L2158218
Project Number:	134487-005	**Report Date:**	10/26/21

Data Qualifiers

the identification is based on a mass spectral library search.

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

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

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

Report Format: Data Usability Report

Project Name:	MIT WEST LOT	**Lab Number:**	L2158218
Project Number:	134487-005	**Report Date:**	10/26/21

REFERENCES

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

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

LIMITATION OF LIABILITIES

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

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

Certification Information

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

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

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

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

Westborough Facility:

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

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

Mansfield Facility:

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

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

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

Serial_No:10262115:29
L2158218 kb 10/25/21

CHAIN OF CUSTODY

ALPHA

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8 Walkup Dr.
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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: 10/15/21

ALPHA Job #: ~~L2156742~~

Project Information
Project Name: MIT WEST LOT
Project Location: CAMBRIDGE, MA
Project #: 134487-005
(Use Project name as Project #) ☐
Project Manager: S. GOLDKAMP, C. MCKENZIE
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days: 5 Day

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

Billing Information
☐ Same as Client Info
PO #

H&A Information
H&A Client: ACC Operating Partnership, LP
H&A Address: 465 Medford Street, Suite 2200
Boston, MA 02129
H&A Phone: 617-886-7380
H&A Fax: 617-886-7680
H&A Email: cmckenzie, sgoldkamp

Regulatory Requirements (Program/Criteria)
MA 2017 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:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
Samples submitted for 2017 NPDES RGP application; please follow approved testing methods and minimum detection levels as required by EPA.

Please specify Metals or TAL.

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

ANALYSIS: 1. VOCs 624.1 & 624.1-SIM; 2. SVOCs 625.1 & 625.1-SIM; 3. TSS 2540, TRC 4500, Cl 300, TCN; 4. PCBs 608, EDB 504, TPHENOL, TPH 1664; 5. Ammonia (NH3), Hex Cr, Hardness, pH; 6. Ethanol; 7. Total NPDES RGP Metals; 8. NPDES RGP Metals (Lab Filtered) (ON HOLD)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Depth	1	2	3	4	5	6	7	8	Sample Specific Comments	Total Bottles
.01 ~~56742-01~~	GP-2(OW)-2021-1015	10/15/2021	1040	AQ	MSP	-	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	X X	~~X~~	1. 1,4-Dioxane by 624.1-SIM	~~20~~
~~-02~~	MIT WEST LOT-RW-2021-1015	10/15/2021	1240	AQ	MSP	-					~~X~~		X		7. NPDES RGP Metals	3
															includes: Ag, As, Cd, Cr, Tri C	
															Cu, Ni, Pb, Sb, Se, Zn, Fe, Hg	
															8. Lab Filtered NPDES RGP	
															Metals (ON HOLD)	

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
[signature]	10/15/21 1330	[signature]	10/15/21 1700
[signature]	10/15/21 1700	[signature] AAL	10/15/21 1700
[signature]	10/15/21 1842	[signature]	10/15/21 1842

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# 2019-22-Alpha Analytical by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and Alpha Analytical.

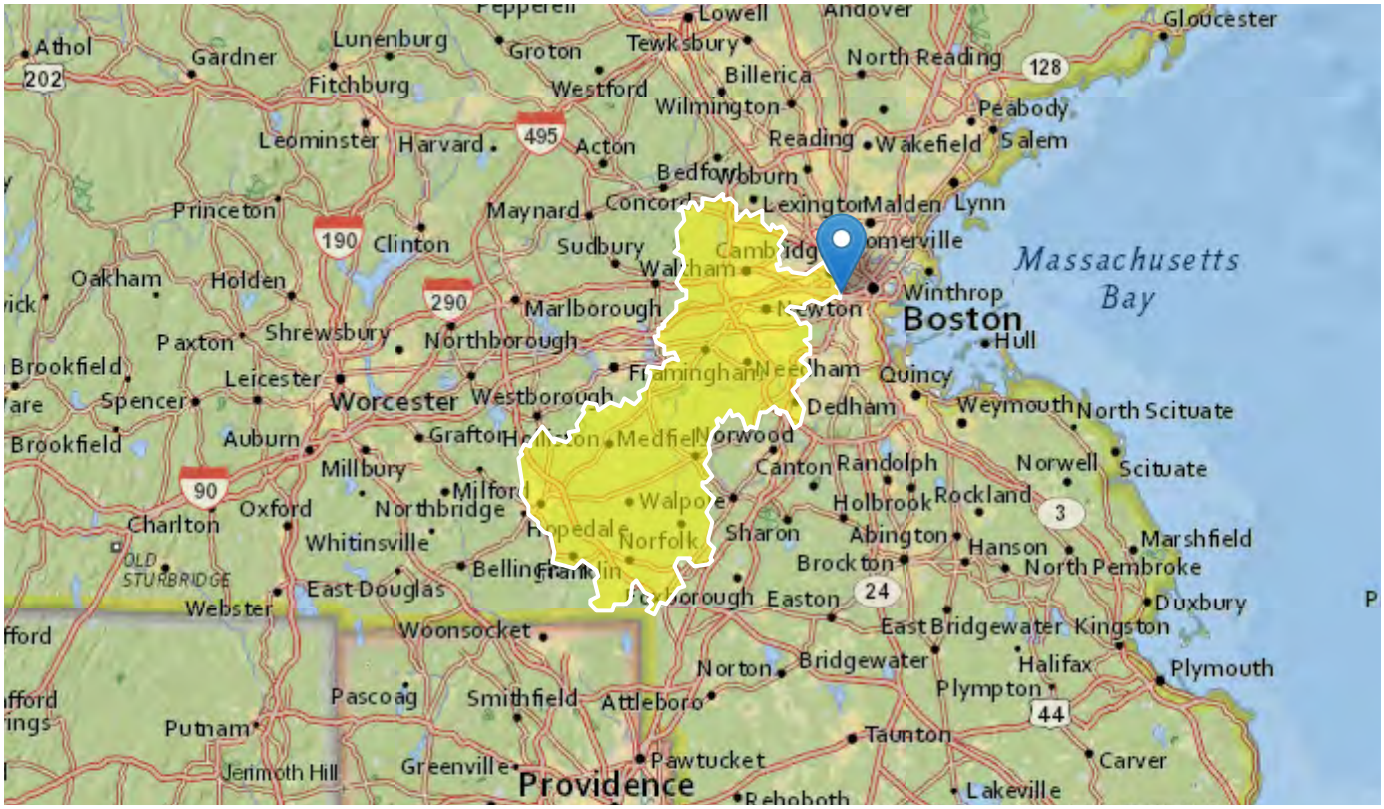
Document ID: 20455 Rev 3 (1/7/2019)

APPENDIX C

Effluent Limitations Documentation

StreamStats Report

Region ID: MA
Workspace ID: MA20211026135029934000
Clicked Point (Latitude, Longitude): 42.35288, -71.10510
Time: 2021-10-26 09:50:54 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	283	square miles
BSLDEM250	Mean basin slope computed from 1:250K DEM	2.329	percent
DRFTPERSTR	Area of stratified drift per unit of stream length	0.23	square mile per mile
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	283	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	2.329	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	0.23	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1

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

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

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

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

Low-Flow Statistics Citations

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

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

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

HALEY & ALDRICH, INC.		**CALCULATIONS**	FILE NO.	134487-004	
			SHEET	1 of 1	
CLIENT	MIT		DATE	26-Oct-21	
PROJECT	MIT West Lot (269 to 301 Vassar Street)		COMPUTED BY	SMG	
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 24.7 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)

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

$Q_S =$ 16.0 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)

$$DF = \frac{Q_S + Q_D}{QD} = \frac{16.0\ MGD + 0.216\ MGD}{0.216\ MGD} = 75.1$$

CONCLUSION The dilution factor for this project is calculated to be 75.1 based on the provided 7Q10 low flow value and discharge flowrate.

Enter number values in green boxes below

Enter values in the units specified

↓

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

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

Enter a dilution factor, if other than zero

↓

75.1

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

Leave 0 if no entry

Enter values in the units specified

↓

533	C_d = Enter influent hardness in **mg/L** $CaCO_3$
52.4	C_s = Enter receiving water hardness in **mg/L** $CaCO_3$

Freshwater only

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

↓

7.1	pH in **Standard Units**
0	Temperature in **°C**
0.129	Ammonia in **mg/L**
52.4	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**
2.65	Copper in **µg/L**
669	Iron in **µg/L**
5.32	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
23.21	Zinc in **µg/L**

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

Enter **influent** concentrations in the units specified

↓

0	TRC in **µg/L**
3.52	Ammonia in **mg/L**
0	Antimony in **µg/L**
6.52	Arsenic in **µg/L**
0	Cadmium in **µg/L**
6.9	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
8.04	Copper in **µg/L**
8550	Iron in **µg/L**
1.98	Lead in **µg/L**
0	Mercury in **µg/L**
5.12	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
29.71	Zinc in **µg/L**
0	Cyanide in **µg/L**
0	Phenol in **µg/L**
0	Carbon Tetrachloride in **µg/L**
0	Tetrachloroethylene in **µg/L**
0	Total Phthalates in **µg/L**
0	Diethylhexylphthalate in **µg/L**
0	Benzo(a)anthracene in **µg/L**
0	Benzo(a)pyrene in **µg/L**
0	Benzo(b)fluoranthene in **µg/L**
0	Benzo(k)fluoranthene in **µg/L**
0	Chrysene in **µg/L**
0	Dibenzo(a,h)anthracene in **µg/L**
0	Indeno(1,2,3-cd)pyrene in **µg/L**
0	Methyl-tert butyl ether in **µg/L**

if >1 sample, enter maximum

if >10 samples, may enter 95th percentile

Enter 0 if non-detect or testing not required

Dilution Factor	75.1					
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	826	µg/L	---	µg/L
Total Suspended Solids	**30**	mg/L	---			
Antimony	**206**	µg/L	48047	µg/L		
Arsenic	**104**	µg/L	751	µg/L		
Cadmium	**10.2**	µg/L	13.7087	µg/L		
Chromium III	**323**	µg/L	4188.2	µg/L		
Chromium VI	**323**	µg/L	858.4	µg/L		
Copper	**242**	µg/L	248.6	µg/L		
Iron	**5000**	µg/L	25519	µg/L		
Lead	160	µg/L	**1.62**	µg/L		
Mercury	**0.739**	µg/L	68.01	µg/L		
Nickel	**1450**	µg/L	2498.9	µg/L		
Selenium	**235.8**	µg/L	375.4	µg/L		
Silver	**35.1**	µg/L	114.0	µg/L		
Zinc	**420**	µg/L	4016.8	µg/L		
Cyanide	**178**	mg/L	390.4	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	22522	µg/L		
C. Halogenated VOCs						
Carbon Tetrachloride	**4.4**	µg/L	120.1	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	247.7	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	165.2	µg/L		
Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---			
Benzo(a)anthracene	**1.0**	µg/L	0.2853	µg/L	---	µg/L
Benzo(a)pyrene	**1.0**	µg/L	0.2853	µg/L	---	µg/L
Benzo(b)fluoranthene	**1.0**	µg/L	0.2853	µg/L	---	µg/L
Benzo(k)fluoranthene	**1.0**	µg/L	0.2853	µg/L	---	µg/L
Chrysene	**1.0**	µg/L	0.2853	µg/L	---	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.2853	µg/L	---	µg/L
Indeno(1,2,3-cd)pyrene	**1.0**	µg/L	0.2853	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	1501	µg/L		
tert-Butyl Alcohol	**120**	µg/L	---			
tert-Amyl Methyl Ether	**90**	µg/L	---			

McKenzie, Corinne

From: Ruan, Xiaodan (DEP) <xiaodan.ruan@state.ma.us>
Sent: Friday, November 12, 2021 1:50 PM
To: McKenzie, Corinne
Cc: Vakalopoulos, Catherine (DEP)
Subject: RE: 7Q10 + Dilution Factor for NPDES NOI - MIT West Lot Project

CAUTION: External Email

Hi Corinne,

I can confirm that the 7Q10 of 24.7 cfs and a dilution factor of 75.1 are correct for the proposed discharge for the project at 277 to 301 Vassar Street, Cambridge, MA, with a design flow of 150 gpm.

Here is water quality information in assisting you in filling out the NOI:

> Waterbody and ID: Charles River (MA72-38) within Charles River Watershed
> Classification: B (CSO)
> Outstanding Resource Water?: no
> State's most recent Integrated List is located here: https://www.epa.gov/sites/production/files/2020-01/documents/2016-ma-303d-list-report.pdf,
> search for "MA72-38" to see the causes of impairments.
> TMDLs: There are two TMDLs (pathogens and nutrients) for this segment

Also, if this is not a *current* MCP site, then in addition to submitting the NOI to EPA, you need to apply with MassDEP and submit a $500 fee (unless fee exempt, e.g., municipality) through ePLACE. The instructions are located on this page: https://www.mass.gov/how-to/wm-15-npdes-general-permit-notice-of-intent. Technical assistant information is available on the ePLACE application webpage.

Please let me know if you have any questions.

Thanks,
Xiaodan

Xiaodan Ruan
Environmental Engineer
Massachusetts Department of Environmental Protection
One Winter Street, Boston, MA 02108
(857)-256-4172
xiaodan.ruan@mass.gov

From: McKenzie, Corinne <CMcKenzie@HaleyAldrich.com>
Sent: Monday, November 1, 2021 8:26 AM
To: Vakalopoulos, Catherine (DEP) <catherine.vakalopoulos@mass.gov>
Cc: Gerald, Shay <SGerald@haleyaldrich.com>
Subject: 7Q10 + Dilution Factor for NPDES NOI - MIT West Lot Project

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Hi Cathy,

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

Project:
MIT West Lot
277 to 301 Vassar Street
Cambridge, MA

Discharge:
Charles River via stormwater system outfall. See attached discharge route.
Design System Flow: 150 gallons per minute (0.216 MGD)
7 Day 10 Year Low Flow value (from attached StreamStats Report) = 24.7 cfs or 16.0 MGD

Dilution Factor (from attached calculations) = 75.1

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

Thank you

Corinne McKenzie
Project Manager

Haley & Aldrich, Inc.
465 Medford Street| Suite 2200
Boston, MA 02129

T: 617-886-7380
C: 857-207-9861

www.haleyaldrich.com

APPENDIX D

Endangered Species Act Assessment

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

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: October 22, 2021
Consultation Code: 05E1NE00-2022-SLI-0292
Event Code: 05E1NE00-2022-E-00946
Project Name: MIT West Lot

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

To Whom It May Concern:

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

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

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

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

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

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

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

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

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

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

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

Project Summary

Consultation Code: 05E1NE00-2022-SLI-0292
Event Code: Some(05E1NE00-2022-E-00946)
Project Name: MIT West Lot
Project Type: DEVELOPMENT
Project Description: The project site is an approximately 67,000 sf parcel located between Vassar Street and the adjacent CSX rail line. This area will be developed into residential for the students at MIT.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.357137699999996,-71.10140078910169,14z

Counties: Middlesex County, Massachusetts

Endangered Species Act Species

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

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

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

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

---

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

Insects

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

Critical habitats

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

MassDEP - Bureau of Waste Site Cleanup

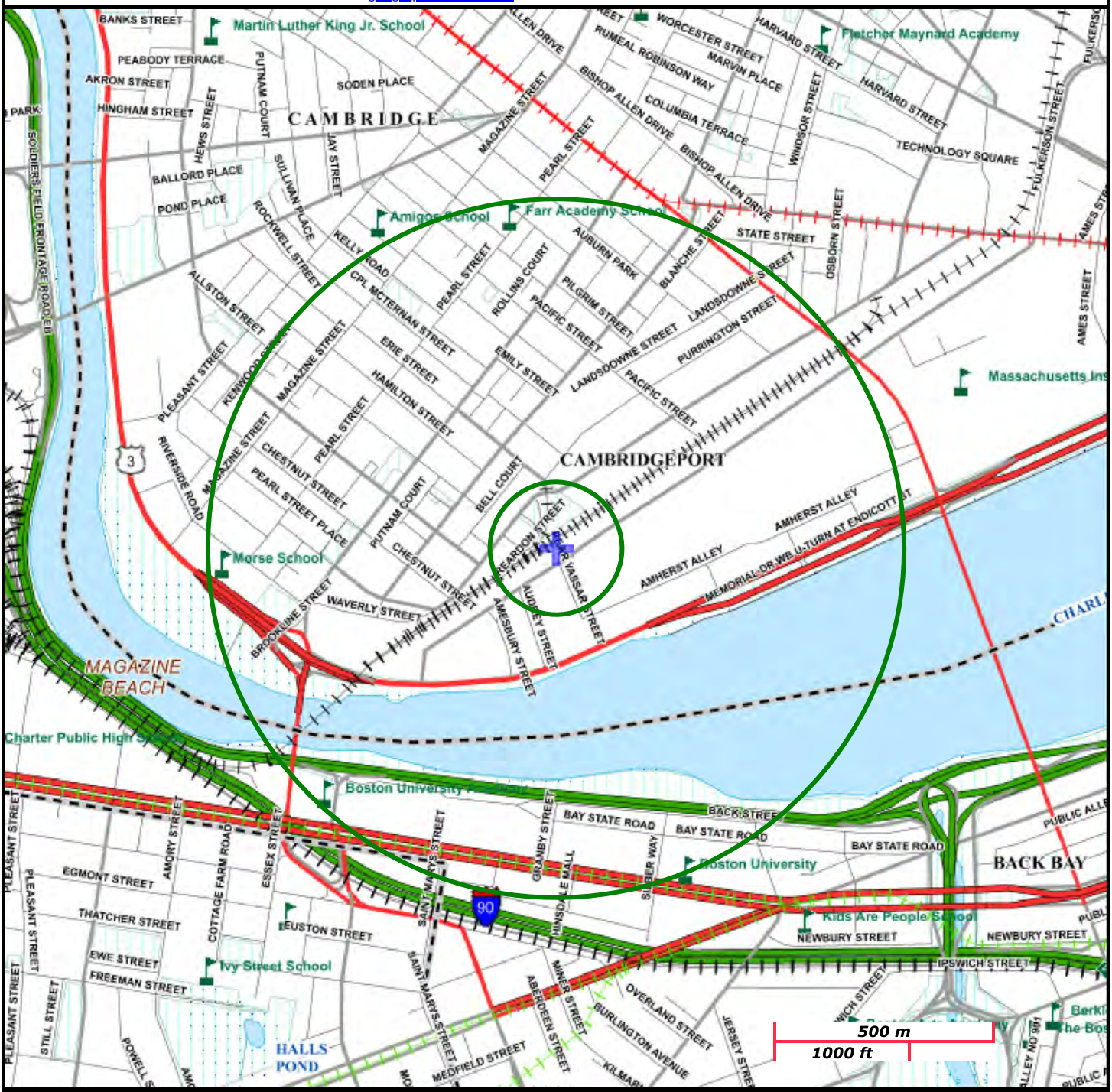
Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

Site Information:
MIT WEST LOT
277 TO 301 VASSAR STREET CAMBRIDGE, MA

NAD83 UTM Meters:
4691476mN , 326776mE (Zone: 19)
November 2, 2021

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

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



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

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

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

Aquifers: Medium Yield, High Yield, EPA Sole Source

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

PWS Protection Areas: Zone II, IWPA, Zone A

Hydrography: Open Water, PWS Reservoir, Tidal Flat

Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

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

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

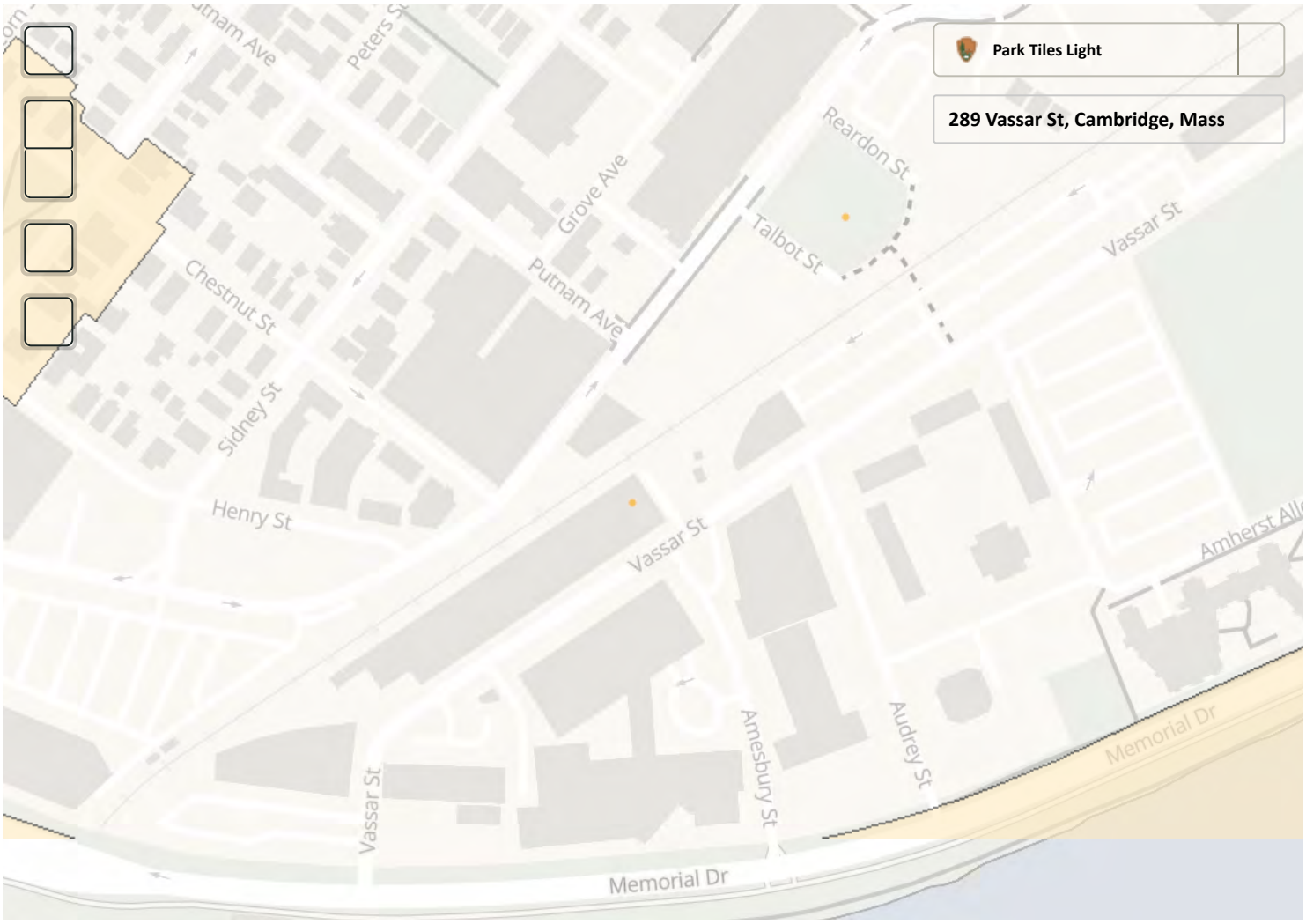
APPENDIX E

National Historic Preservation Act Review

Na onal Register of Histori…

Na onal Park Service
U.S. Department of the Interior

Public, non-restricted data depic ng Na onal Register spa al data proce…



200

:Map (h ps://www.openstreetmap.org/copyright) contributors | Cultural Resources GIS, Na onal Park Service | Geocoding by Esri

Massachusetts Cultural Resource Information System
MACRIS

For more information about this page and how to use it, click here.

Inventory No:	CAM.362
Historic Name:	Metropolitan Supply Company Warehouse
Common Name:	
Address:	277-287 Vassar St
City/Town:	Cambridge
Village/Neighborhood:	Cambridgeport; Cambridgeport, South
Local No:	61-12;D
Year Constructed:	1939
Architect(s):	
Architectural Style(s):	Not researched
Use(s):	Warehouse
Significance:	Architecture; Commerce
Area(s):	INV CAM.D: Fort Washington Historic District
Designation(s):	Local Historic District (03/08/1982)
Building Material(s):	

Digital Photo Not Yet Available

There is no form for this resource. Information can be found on the CAM.D form and/or the appropriate area forms listed below.

Massachusetts Cultural Resource Information System
MACRIS

For more information about this page and how to use it, click here.

Inventory No:	CAM.363
Historic Name:	Metropolitan Supply Company Warehouse
Common Name:	
Address:	289-293 Vassar St
City/Town:	Cambridge
Village/Neighborhood:	Cambridgeport; Cambridgeport, South
Local No:	61-11;D
Year Constructed:	1939
Architect(s):	
Architectural Style(s):	Not researched
Use(s):	Warehouse
Significance:	Architecture; Commerce
Area(s):	INV CAM.D: Fort Washington Historic District
Designation(s):	Local Historic District (03/08/1982)
Building Material(s):	

Digital Photo Not Yet Available

There is no form for this resource. Information can be found on the CAM.D form and/or the appropriate area forms listed below.

Massachusetts Cultural Resource Information System

Scanned Record Cover Page

Inventory No:	CAM.D
Historic Name:	Fort Washington Historic District
Common Name:	
Address:	
City/Town:	Cambridge
Village/Neighborhood:	Cambridgeport; Cambridgeport, South
Local No:	11
Year Constructed:	
Architect(s):	
Architectural Style(s):	
Use(s):	Fort or Base; Military Other; Other Commercial; Other Recreational
Significance:	Archaeology, Historic; Architecture; Commerce; Military; Recreation
Area(s):	
Designation(s):	Local Historic District (03/08/1982)
Building Materials(s):	

The Massachusetts Historical Commission (MHC) has converted this paper record to digital format as part of ongoing projects to scan records of the Inventory of Historic Assets of the Commonwealth and National Register of Historic Places nominations for Massachusetts. Efforts are ongoing and not all inventory or National Register records related to this resource may be available in digital format at this time.

The MACRIS database and scanned files are highly dynamic; new information is added daily and both database records and related scanned files may be updated as new information is incorporated into MHC files. Users should note that there may be a considerable lag time between the receipt of new or updated records by MHC and the appearance of related information in MACRIS. Users should also note that not all source materials for the MACRIS database are made available as scanned images. Users may consult the records, files and maps available in MHC's public research area at its offices at the State Archives Building, 220 Morrissey Boulevard, Boston, open M-F, 9-5.

Users of this digital material acknowledge that they have read and understood the MACRIS Information and Disclaimer (http://mhc-macris.net/macrisdisclaimer.htm)

Data available via the MACRIS web interface, and associated scanned files are for information purposes only. THE ACT OF CHECKING THIS DATABASE AND ASSOCIATED SCANNED FILES DOES NOT SUBSTITUTE FOR COMPLIANCE WITH APPLICABLE LOCAL, STATE OR FEDERAL LAWS AND REGULATIONS. IF YOU ARE REPRESENTING A DEVELOPER AND/OR A PROPOSED PROJECT THAT WILL REQUIRE A PERMIT, LICENSE OR FUNDING FROM ANY STATE OR FEDERAL AGENCY YOU MUST SUBMIT A PROJECT NOTIFICATION FORM TO MHC FOR MHC'S REVIEW AND COMMENT. You can obtain a copy of a PNF through the MHC web site (www.sec.state.ma.us/mhc) under the subject heading "MHC Forms."

Commonwealth of Massachusetts
Massachusetts Historical Commission
220 Morrissey Boulevard, Boston, Massachusetts 02125
www.sec.state.ma.us/mhc

This file was accessed on: Wednesday, November 3, 2021 at 8:13: PM

359-363 D H CAM.D

FORM A - AREA AND SITE SURVEY
MASSACHUSETTS HISTORICAL COMMISSION
Office of the Secretary, State House, Boston

1. Town CAMBRIDGE

2. Name of area or section LHD-3 1/8 1/2
FORT WASHINGTON

3. General Date or Period 1775 + 1857

4. Is the area uniform? YES
In style YES
In condition YES
In type of ownership YES
In use (Explain) YES
(PUBLIC PARK)

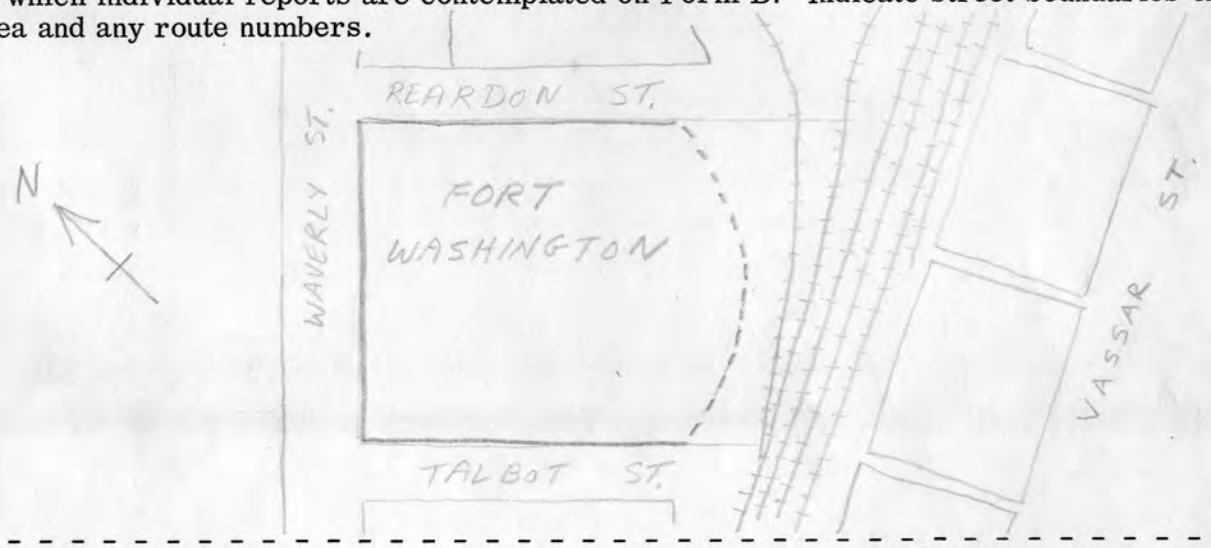
THE PARK ITSELF IS UNIFORM, BUT THE SURROUNDING WAREHOUSE AREA IS MOST INCOMPATIBLE

5. Is area potentially threatened? YES
By Zoning No
By Roads YES (INNER BELT)
By Developers YES (ENCROACHMENTS OF ST. JOHNSBURY TRUCKING CO.)
By Deterioration YES

6. Please comment on the Historical or Architectural importance of this area:

FORT WASHINGTON IS THE LAST RELIC OF REVOLUTIONARY WAR FORTIFICATIONS IN CAMBRIDGE, BUILT AS A HALF-MOON BATTERY IN 1775 ON ORDERS OF GEORGE WASHINGTON, THE FORT PLAYED ITS ROLE ALONG WITH OTHER DEFENSES IN THE SIEGE OF BOSTON. THE LAND WAS DEEDED TO THE CITY AS A PARK BY THE DANA FAMILY IN 1857, AT WHICH TIME THE HANDSOME CAST-IRON FENCE AND THE THREE CANNON WERE ADDED. DESPITE PHYSICAL DETERIORATION AND INHOSPITABLE SURROUNDINGS, THE SITE ITSELF REMAINS INTACT, IMPORTANT NOT ONLY FOR ITS ASSOCIATIONS WITH THE REVOLUTION AND FOR THE ARTISTIC QUALITIES OF ITS FENCE, BUT ALSO AS AN EARLY EXAMPLE OF HISTORIC PRESERVATION THROUGH THE DEDICATION OF PRIVATE LAND TO PUBLIC MEMORIAL USE.

7. Draw a general map of the area involved. Please indicate in red any known historic sites on which individual reports are contemplated on Form B. Indicate street boundaries of area and any route numbers.



Recorder E. PEARSON & R. RETTIG

For CAMBRIDGE HISTORICAL COMMISSION
(Name of Organization)

E09-0992-011

NOTE: Recorder should obtain written permission from Commission or sponsoring organization before using this form.

APPENDIX F

Cambridge Dewatering Permit Application

PERMIT TO DEWATER

Location: MIT West Lot - 269 to 301 Vassar Street

Owner: Massachusetts Institute of Technology

Contractor: John Moriarty & Associates

Temporary ☑

Permanent ☐

The property owner, Massachusetts Institute of Technology 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:

Haley & Aldrich, Inc. Report on "NPDES RGP Application for Temporary Construction Dewatering, MIT West Lot, 269 to 301 Vassar Street, Cambridge, Massachusetts", dated 12 November 2021.

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

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.

City Manager	Property Manager: Corporate Entity President, General Partner or Trustee Trustee with Instrument of Authority
Date	11.30.21 Date
City Solicitor	Contractor
Date	12/1/2021 Date
Commissioner of Public	Contractor
Date	Date

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