

MassDEP RTN 3-15009 and RTN 3-36365

DRAFT Release Abatement Measure Plan

Parcel P-3: Tremont and Whittier Streets,
Boston (Roxbury), Massachusetts

Submitted to:

Massachusetts Department of Environmental Protection
Northeast Regional Office
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Wilmington, MA 01887

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Executive Summary

GEI Consultants, Inc. prepared this Release Abatement Measure (RAM) Plan on behalf of the Boston Planning & Development Agency (BPDA) for the management and disposal of contaminated soil at the property identified as Parcel P-3 (the Property) and at Whittier and Tremont Streets in Roxbury, Massachusetts. The RAM is for the targeted cleanup of a lead contaminated soil hot spot and a portion of an approximately 10,000 cubic yards soil mound. The mound is mixed soil and debris including metal, concrete, and brick debris, tires, and trash. This area is entirely unpaved and is surrounded by a fence. Two Massachusetts Department of Environmental Protection (MassDEP) disposal sites are on the Property; Release Tracking Numbers (RTNs) 3-15009, originally notified to MassDEP in 1997 and RTN 3-36365 notified to MassDEP on July 16, 2020. RTN 3-36365 has been linked to RTN 3-15009 creating a combined disposal site (the Site).

The soil contamination at the Property is volatile organic compounds (VOCs), volatile and extractable petroleum hydrocarbons (VPH and EPH), PAHs, and metals. The groundwater contamination is chlorinated VOCs, PAHs, and metals. The source of the contamination observed in the soil is likely contaminants common in urban fill and possibly historic releases from former industrial use of the Site. Sources of groundwater contamination include historic industrial use of the Site, and possible upgradient sources of VOC contamination.

The objective of this RAM Plan is to excavate, treat if necessary, and otherwise handle soil, including transport for off-site reuse, disposal, recycling, and/or treatment. Management of groundwater is not anticipated. The RAM Plan has been developed to be protective of construction workers and surrounding receptors from direct contact with potentially contaminated soil and/or fugitive dust inhalation.

The RAM includes removal of the lead hot spot that is approximately 5 to 7 feet below ground surface as the primary risk reduction measure to eliminate exposure pathways and avoid the need for an Engineered Barrier. This soil will require on-site treatment of leachable lead to de-characterize the soil as hazardous waste prior to disposal at an out-of-state lined landfill as non-hazardous waste. The lead hot spot is estimated to be approximately 250 cubic yards.

Off-site disposal of the soil mound will require disposal at various different soil receiving facilities, such as in-state landfills, asphalt batch recycling plants, and/or out-of-state landfills. The RAM includes removal of a portion of this soil mound as a risk reduction measure to reduce exposure pathways. The RAM will be used to dispose off-site the most highly contaminated soil in the mound based on soil pre-characterization sampling and testing to be performed as part of the RAM. The soil mound is estimated to be approximately 10,000 cubic yards; however, the quantity of the soil mound identified for excavation and off-site disposal under this RAM is approximately 200 cubic yards.

Approximately 450 cubic yards of soil may be excavated as part of the RAM. We are requesting approval to manage up to 1,000 cubic yards of soil as Remediation Waste during the RAM, which accounts for potential changes in scope or design.

The RAM is expected to be completed in 2021.

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1. Introduction

GEI Consultants, Inc. prepared this Release Abatement Measure (RAM) Plan on behalf of the Boston Planning & Development Agency (BPDA) for the management and disposal of contaminated soil at the property identified as Parcel P-3 (the Property) and at Whittier and Tremont Streets in Roxbury, Massachusetts (the Site; Figs. 1 and 2). Two Massachusetts Department of Environmental Protection (MassDEP) disposal sites are on the Property; Release Tracking Numbers (RTNs) 3-15009, originally notified to MassDEP in 1997 and RTN 3-36365 notified to MassDEP on July 16, 2020. RTN 3-36365 has been linked to RTN 3-15009 creating a combined disposal site (the Site). This RAM Plan was prepared in accordance with the Massachusetts Contingency Plan (MCP; 310 CMR 40.0440).

1.1 Purpose

The purpose of this RAM Plan was to meet the requirements of the Massachusetts Contingency Plan (MCP, 310 CMR 40.0000).

1.2 Submittals

The MassDEP RAM Transmittal Form (BWSC106) is being submitted electronically via eDEP, and a copy is in Appendix A. Two separate forms were filed for the two RTNs (RTNs 3-15009 and 3-36365).

1.3 Public Involvement

As required by 310 CMR 40.1403, letters were distributed to the Chief Municipal Officer (Boston Mayor) and Board of Health (Boston Public Health Commission) notifying them of the availability of the Report. Copies of the notification letters are in Appendix B.

1.3.1 PIP Activities

Disposal site RTN 3-15009 was designated a Public Involvement Plan (PIP) site in 2005. A public meeting to discuss and present the draft RAM Plan was held on <PENDING>, 2021. Copies of the meeting notification letters sent to the PIP petitioners; a list of community members notified, PIP meeting minutes and a copy of the PIP meeting presentation are in Appendix B <PENDING>.

1.4 Project Description

The RAM is for the targeted cleanup of lead contaminated soil which is considered a “hot spot” under the MCP and a portion of an approximately 10,000 cubic yards soil mound.

The lead contaminated soil hotspot is east of Vernon Street and south of an undeveloped road, formerly Hampshire Street (Fig. 2). The soil mound is on the northeast portion of the Site (Fig. 2), east of Vernon Street, north of Hampshire Street and south of Tremont Street. It is a large artificial mound, 5 to 10 feet above the surrounding pavement, except for the northeast corner which is landscaped and at normal grade. The mound is mixed soil and debris including metal, concrete, and brick debris, tires, and trash. This area is entirely unpaved and is surrounded by a fence.

1.4.1 Lead Hot Spot Removal

The lead contaminated soil in the hot spot area is within approximately 5 to 7 feet of the ground surface. Due to the active utility along the paper Hampshire Street, there is a greater exposure potential to subsurface soil during a utility repair at this portion of the Site; therefore, this area is defined as a soil hot spot for lead. The lead levels in the hot spot also exceed the MCP upper concentration limit, which if left in place would require an Engineered Barrier. The lead hot spot is estimated to be approximately 250 cubic yards.

The RAM includes removal of the lead hot spot as the primary risk reduction measure to eliminate exposure pathways and avoid the need for an Engineered Barrier. This soil will require on-site treatment of leachable lead to de-characterize the soil as hazardous waste prior to disposal at an out-of-state lined landfill as non-hazardous waste.

1.4.2 Soil Mound Removal

The source of the soil mound is unknown, but it is likely from unauthorized dumping of construction debris and excavated soil from another construction site (Fig. 2). The mound has been on the Site for at least 25 years. There are a range of contaminants in the soil mound, primarily attributable to urban fill and include lead, petroleum hydrocarbons and polycyclic aromatic hydrocarbons (PAHs). The soil mound is estimated to be approximately 10,000 cubic yards.

Off-site disposal of the soil mound will require various different soil receiving facilities, such as in-state landfills, asphalt batch recycling plants, and/or out-of-state landfills. The RAM includes removal of a portion of this soil mound as a risk reduction measure to reduce exposure pathways. The RAM will be used to dispose off-site the most highly contaminated soil in the mound based on soil pre-characterization sampling and testing to be performed as part of the RAM.

To achieve a Permanent Solution under the MCP, additional off-site soil disposal from the mound may be required. Excavation and disposal of that additional soil will be part of future remediation phases, likely associated with redevelopment of the Property.

1.5 Contact Information (310 CMR 40.0444[1][a])

Responsibility for the RAM

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2. Description of Release, Site Conditions, and Surrounding Receptors (310 CMR 40.0444[1][b])

2.1 Site Description

The Site is at the intersection of Tremont Street and Whittier Street in Boston, Massachusetts (Fig. 1). The Site is vacant and owned by the BPDA. The latitude and longitude of the Site are 42°19'59.88"N and 71° 5'21.33"W, and UTM coordinates for the Site are 4,688,888mN and 327,826mE. The City of Boston Assessor's database identifies the Site as parcel #902980100.

The Site is approximately 334,546 square feet or 7.7 acres. The Site is bounded by Tremont Street to the north, Whittier Street to the east, Downing Street to the south, and an unnamed road to the west that accesses the parking lots behind the Madison Park High School. Additionally, Vernon Street bisects the eastern and western portions of the Site. In the eastern portion of the Site, an undeveloped road, formerly Hampshire Street, bisects the Site north of the former WSHC building (Fig. 2).

The former WSHC, a vacant, four-story brick building, is on the southeast portion of the Site (Fig. 2, east of Vernon street and south of Hampshire Street). The building is surrounded by pavement, which is in poor condition and a fence. A large artificial mound, approximately 5 to 10 feet above the surrounding pavement, except for the northeast corner, which is landscaped and at normal grade, is on the northeast portion of the Site (Fig. 2, east of Vernon Street and north of Hampshire Street). The mound is mixed soil and debris including metal, concrete, and brick debris, tires, and trash. This area is entirely unpaved and is surrounded by a fence.

The western portion of the Site (Fig. 2, west of Vernon Street) is primarily paved asphalt parking lots, which are in good condition. In this area there are also some landscaped areas and a small community garden (Whittier Community Garden) with raised planter beds.

2.2 Natural Resource Areas and Surrounding Land Use

Based on our review of the MassGIS Natural Resources Map for the Site (Fig. 3) and City of Boston assessor's maps, the environmental setting and potential sensitive receptors at the Site and in its vicinity include:

- Residential Population: The Site is in an urban area of Boston. We estimate that there are more than 1,000 residents within 0.5-mile of the Site.
- On-site Workers: There are fewer than 10 workers at the Site.

- Institutions: There are no institutions, as defined by the MCP, within 500 feet of the Site boundary. However, Madison Park High School is approximately 100 feet southwest and upgradient of the Site and the current WSHC is approximately 100 feet northwest and upgradient of the Site.
- Drinking Water Supplies: There are no known drinking water supplies (Zone II areas, Interim Wellhead Protection Areas, Zone A areas, Potentially Productive Aquifers [PPA], or private wells) or Sole Source Aquifers within 500 feet of the Site.
- Surface Waters and Wetlands: There are no surface water bodies or wetlands within 0.5 mile of the Site. The Back Bay Fens is approximately 0.5 mile to the northwest.
- Fish Habitat: The Back Bay Fens, approximately 0.5 mile from the site, is presumed fish habitat.
- Area of Critical Environmental Concern (ACEC): According to the MassGIS map, the Site is not located in an ACEC.
- Threatened or Endangered Species: According to the MassGIS map, there are no Natural Heritage and Endangered Species Program Estimated Habitats for Rare Wetlands Wildlife within 500 feet of the Site. According to the Massachusetts Natural Heritage Atlas, there are no priority habitats of rare species, estimated habitats of rare wildlife, or certified vernal pools within 0.5 mile of the Site.
- Protected Open Space: According to the MassGIS map, there is one public park, associated with Roxbury Community College, approximately 300 feet south of the Site.

2.3 Release Description

The BRA, predecessor to the BPDA, engaged W&S to conduct subsurface investigations on the eastern portion of the Property in 1996 and 1997. The investigation identified TPH, PAHs, and lead in excess of the RCS-1 standards. The BRA reported the release to the MassDEP on April 11, 1997 and the Site was assigned RTN 3-15009. The Site was classified as Tier II on April 10, 1998.

In 2002, W&S conducted Phase II investigations at the Site. W&S collected soil and groundwater samples for analysis of VPH, EPH, PCBs, and RCRA 8 metals. The detected contaminants were predominantly TPH, PAHs, and lead. As a result of this investigation, W&S identified the RTN 3-15009 disposal site as the eastern portion of the Property except for the former WSHC and its parking lot (Fig. 2).

W&S also conducted a combined Method 1 and 3 Risk Characterization for the RTN 3-15009 disposal site. The risk characterization indicated that a condition of NSR did not exist at the Site. In their Phase III RAP, W&S proposed excavating a hot spot of

lead-contaminated soil on the southeast portion of the RTN 3-15009 disposal site and placing an AUL on the northern portion of the disposal site to restrict residential development.

The lead hot spot was not excavated and the AUL was not prepared. The next regulatory deadline for the RTN 3-15009 disposal site was a Phase IV RIP by 2003; which was not completed.

In 2017, on behalf of the then-designated developer, P-3 Partners, GEI conducted a subsurface investigation. Based on the results of our investigation, concentrations of chlorinated VOCs including TCE, cis-1,2-DCE, and vinyl chloride in groundwater on the western portion of the Property exceeded the applicable MCP RCGW-2 standard. This constituted a new MassDEP reportable condition for the property owner (BPDA).

In addition, the concentration of lead and PAHs in soil samples collected from one test pit and one soil boring were greater than the RCS-1 standard. The test pit was within the boundary of the RTN 3-15009 disposal site, but the boring was in the western portion of the Property which had not been reported to MassDEP. However, the lead and PAHs concentrations are consistent with the coal and coal ash observed in the upper 8 to 10 feet of soil.

The new groundwater and soil exceedances were reported to MassDEP by BPDA on July 16, 2020 and the release was assigned RTN 3-36365.

In **<PENDING>** 2021, GEI, on behalf of the BPDA, submitted a Supplemental Phase II Comprehensive Site Assessment (CSA), Phase III Remedial Action Plan (RAP) Addendum, and Temporary Solution Statement (GEI 2021 Supplemental Phase II/III Report). The report linked RTN 3-36365 to the RTN 3-15009, enlarging the historic disposal site to incorporate both (Fig. 2). In the report, GEI concluded that a condition of No Significant Risk did not exist at the Site from exposure to soil and groundwater. However, a condition of No Substantial Hazard to human health existed at the Site. GEI identified and evaluated remedial action alternatives (RAA) that were reasonably likely to achieve a Permanent or Temporary Solution and were feasible considering the expertise exists to effectively implement them. GEI recommended Site Maintenance as the selected remedy since it achieved a Temporary Solution and was more cost-effective than other RAAs that could potentially achieve a Permanent Solution. Definitive and enterprising steps were also recommended to achieve a Permanent Solution, including evaluating the feasibility of removing the large, artificial mound of soil at the Site.

3. Subsurface Conditions

3.1 Previous Investigations

3.1.1 Phase I Initial Site Investigation/Tier Classification (1996-1998)

The BRA retained W&S to perform a Phase I Initial Site Investigation at the Property in 1996. During their site reconnaissance and records review, permits for seven historic storage tanks were identified. These historic storage tanks included a 3,000-gallon fuel oil UST in the basement of the former WSHC. No permits were identified for the abandonment or removal of these storage tanks. In addition, W&S observed dumping of solid waste including fill, construction, and demolition debris throughout the site.

Between November 1996 to March 1997, W&S excavated 7 test pits, advanced 31 soil borings, and installed 12 monitoring wells throughout the eastern portion of the Site. Fig. 2 shows the locations of W&S's explorations. They submitted soil and groundwater samples to AMRO Environmental Laboratories Corporation (AMRO) of Merrimack, New Hampshire, for an analysis of TPH, VOCs, PAHs, and RCRA 8 metals. W&S's soil and groundwater data are summarized in Tables 1 and 2, respectively.

Soil samples collected from the fill mound on the northeastern portion of the Site contained TPH, PAHs, and lead in excess of RCS-1 standards. Some PAHs exceeded RCS-1 standards below the pavement southwest of the former WSHC.

The BRA reported the release to MassDEP on April 11, 1997. MassDEP assigned RTN 3-15009. W&S classified the Site as Tier II on April 10, 1998 and submitted the Phase I ISI Report/Tier Classification to MassDEP. The Numerical Ranking System (NRS) for the disposal site was 143. The disposal site was limited to the eastern portion of the Property (Fig. 2).

3.1.2 Phase II Comprehensive Site Assessment and Phase III Remedial Action Plan (2002)

BRA retained W&S to perform a Phase II CSA and prepare a Phase III Remedial Action Plan (RAP) (W&S 2002 Phase II/III Report) for the Site. This was limited to the eastern portion of the Property. W&S conducted additional subsurface investigations, including advancing soil borings, installing monitoring wells, and collecting soil and groundwater samples for analysis of VPH with targets, EPH with targets, PCBs, and RCRA 8 metals. Fig. 2 shows the locations of W&S's explorations. W&S's soil and groundwater data are summarized in Tables 1 and 2, respectively.

Contaminants in the urban fill and soil mound were predominantly TPH, PAHs, and lead east of Vernon Street (Fig. 2). One soil sample (B211) collected east of Vernon Street also exceeded the Toxicity Characteristic Leaching Procedure (TCLP) hazardous waste threshold for lead. As a result of the chemical testing at the Property, W&S identified the RTN 3-15009 disposal site as the area north and west of the former WCHC, bounded to west by Vernon Street (Fig. 2). The former WSHC and its parking lot were not included in the RTN 3-15009 site boundary, nor was the portion of Property west of Vernon Street.

W&S prepared a combined Method 1 and 3 Risk Characterization for the RTN 3-15009 disposal site. The risk characterization indicated that a condition of NSR did not exist, due to the lead contamination in the soil west of the former WSHC. W&S proposed excavating the lead-contaminated soil and placing an AUL on the northern portion of the disposal site, to restrict residential development.

The lead hot spot was not excavated and the AUL was not prepared. The next regulatory deadline for the site was a Phase IV RIP by 2003; which was never completed.

3.2 GEI Subsurface Investigations 2013-2017

3.2.1 Geotechnical Soil Borings, 2013 and 2016

GEI observed Northern Drill Service, Inc. (Northern) of Northborough, Massachusetts drill two borings (B101 and B102) between July 25, 2013 and July 27, 2013. The borings were advanced using wash-rotary techniques with driven casing and drilling mud. The boring locations are shown in Fig. 4.

GEI observed New England Boring Contractors of Derry, New Hampshire drill ten borings (B201 through B210) between June 28, 2016 and July 19, 2016. The borings were advanced using wash-rotary techniques with driven casing and drilling mud. The boring locations are shown in Fig. 4.

Standard Penetration Tests (SPTs) were performed and split spoon samples were generally collected at 5-foot intervals. All SPTs were performed using a safety hammer with a rope and cathead. Recovered split-spoon soil samples were placed in jars and sent to our laboratory for verification of field classification. Individual sample descriptions were provided in the boring logs in GEI's 2021 Supplemental Phase II/III Report.

3.2.2 Phase II Environmental Site Assessment, 2017

In February 2017, GEI prepared an ASTM Phase II ESA, to evaluate potential releases of OHM associated with the industrial history of the Site, particularly on the western portion (west of Vernon Street; Fig. 4).

3.2.2.1 Field Investigation and Soil Sampling

GEI observed Northern excavate seven test pits (TP101, TP103 to TP108) (Fig. 4). The test pits were excavated to depths ranging from 2 to 10 feet deep and logged for soil type, debris, and buried structures. Test pits logs were in GEI's 2021 Supplemental Phase II/III Report.

The fill contained abundant concrete and brick in a fine to coarse sandy matrix. We observed several pipes and historic structures during excavations. A buried concrete pipe was observed in TP-103, a competent brick layer was observed in TP-104, and a concrete foundation was observed 5.0 ft northeast of TP-104. TP-105, on the northeastern side of the Property, contained a layer of degraded concrete approximately 8 feet deep. Steel and copper pipes were observed in TP-106 and TP-107.

GEI also observed Northern advance seven soil borings (B301 through B303 and B305 through B308) (Fig. 4). The borings were advanced through the water table using hollow stem augers (HSA) to a depth of 20 to 30 feet below ground surface and completed as groundwater monitoring wells. Boring logs and monitoring well installation logs were in GEI's 2021 Supplemental Phase II/III Report.

The soil samples from each split spoon were screened for VOCs using a photoionization detector (PID), with a 10.6 eV bulb. The SPTs were conducted continuously from the ground surface to the groundwater table and at 5-foot intervals from the groundwater table to the bottom of each boring.

Soil samples for chemical analysis were collected from both the test pits and the borings. The samples were collected to characterize shallow soils and deeper soils near historic industrial operations. Soil samples were collected for laboratory analysis based upon field test data and visual/olfactory evidence of OHM. In general, one soil sample was collected from each boring and test pit.

Soil samples from test pits were generally collected from 0 to 3 feet and submitted to Alpha Analytical of Westborough, Massachusetts for analysis of PCBs and either RCRA 8 metals or MCP 14 metals. Soil samples from borings were collected from the interval with the highest PID reading, or from the water table, and generally analyzed for VOCs, VPH, and EPH.

Additional soil samples were collected for pre-characterization from TP-105 and B308. One soil sample was characterized from TP-105 within the upper fill and two soil samples were characterized from B308, one sample from within upper fill and one sample from within the underlying glacial outwash.

3.2.2.2 Well Installation and Groundwater Sampling

Northern completed the seven borings as monitoring wells using 2-inch diameter PVC and 10 feet of slotted well screen. The monitoring wells were advanced through the fill layer and screened across the estimated water table.

The monitoring wells were backfilled from the bottom to above the screened sections using clean sand and sealed above that with bentonite chips. They were finished with 4-inch steel road boxes mounted flush with the ground surface and surrounded by a concrete pad. Monitoring well installation logs were in GEI's 2021 Supplemental Phase II/III Report.

We developed the seven newly installed monitoring wells after the completion of drilling and one existing monitoring well B205(OW) by purging them with a submersible pump. A well was considered developed when 10 well volumes were removed, when water removed from the well was relatively free of fine-grained material, or after the well ran dry.

Between March 2 and March 5, 2017, we collected groundwater samples, and surveyed the vertical elevations of the eight monitoring wells. We surveyed the vertical elevations of the monitoring wells relative to an onsite benchmark. The benchmark used was the top of the fire hydrant located adjacent to B(MW)305.

Based on groundwater measurements, groundwater flows south to north across the Site. The groundwater gradient appears to be steeper on the southern side of the Property, between B(MW)306 and B(MW)307, and shallower to the east.

Each well was sampled with a peristaltic pump, using low-flow methods. The groundwater samples were submitted to Alpha for chemical testing of VOCs, EPH, and VPH. One sample, from B(MW)307, was tested for groundwater discharge permit requirements.

3.2.2.3 Chemical Testing Results: Soil

The chemical testing results for soil associated with the western portion of the Site are summarized in Table 3 and the laboratory data report was in GEI's 2021 Supplemental Phase II/III Report. The chemical testing results for soil associated with the eastern portion of the Site (original RTN 3-15009) were summarized in W&S's 2002 Phase II/III Report and are also presented in Table 1 of this report.

Results indicated the presence of the following at concentrations above the laboratory reporting limit:

- VOCs: Benzene, TCE.
- PAHs: Acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene,

chrysene, dibenzo(a,h)anthracene, dibenzofuran, di-n-butyl phthalate, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene.

- EPH: C₁₁–C₁₂ aromatics, C₁₉–C₃₆ aliphatics, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene.
- PCBs: Aroclor 1254
- Pesticides: Endosulfan II.
- Total Petroleum Hydrocarbons.
- Metals: Arsenic, barium, beryllium, chromium, lead, mercury, nickel, vanadium, and zinc.

Based on the soil chemical testing results, we identified lead and four PAHs above the RCS-1 reporting standard: benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, and dibenzo(a,h)anthracene.

3.2.2.4 Chemical Testing Results: Groundwater

The chemical testing results for groundwater associated with the western portion of the Site are summarized in Table 2 and the laboratory data report was in GEI's 2021 Supplemental Phase II/III Report. The chemical testing results for groundwater associated with the eastern portion of the Site (original RTN 3-15009) were summarized in W&S's 2002 Phase II/III Report and are also presented in Table 2 of this report.

Results indicated the presence of the following in wells B(MW)302, B(MW)305, B(MW)306, B(MW)307, and B(MW)308 at concentrations above the laboratory reporting limit:

- VOCs: Tetrachloroethene (PCE), TCE, cis-1,2- DCE, 1,2-dichloroethene, ethyl ether, 1,4-dioxane, p-isopropyltoluene, vinyl chloride.
- PAHs: Acenaphthene, fluoranthene, fluorene, 2-methylnaphthalene, phenanthrene, and pyrene.
- EPH: Acenaphthene, anthracene, fluoranthene, fluorene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene.
- Metals: Cadmium, copper, and nickel.

Based on the groundwater chemical testing results, we identified three chlorinated VOCs at or above the RCGW-2 standard: TCE, cis-1,2-DCE, and vinyl chloride. Exceedances of RCGW-2 for TCE were detected in B(MW)302, B(MW)306, and B(MW)308. Additionally, B(MW)306 also contained vinyl chloride and cis,1,2-DCE above the RCGW-2.

3.3 Topography

The Site is in an area that is naturally level; however, a large, artificial, mound of mixed soil and debris (brick, concrete, etc.) is on the northeast corner of the Site. Based on the United States Geological Survey (USGS) Topographic Quadrangle (7.5 x 15 Minute Series), the surface elevation is approximately 40 feet above National Geodetic Vertical Datum (NGVD). Surface water runoff is likely directed to the catch basins located on the Property.

3.4 Geology

The soil layers encountered in the borings are described below, starting at the ground surface. This description incorporates the results of both the geotechnical and environmental drilling programs. The soil conditions are known only at the boring locations. Conditions between borings may differ significantly from those shown in the subsurface profiles and described below.

- Asphalt/Concrete – A 6-inch-thick layer of asphalt or concrete was encountered at the ground surface at borings B302(MW) and B305(MW). However, most of the site is unpaved.
- Topsoil – A 6 to 12-inch layer of brown soil with roots and sand was present in the test pits in the landscaped areas and in B301(MW), B303(MW), B306(MW) and B308(MW).
- Fill – A 3- to 17.5-foot-thick layer of miscellaneous fill was encountered in all of the borings. The fill generally consisted of fine to coarse sand with varying amounts of gravel to widely graded gravel with varying amounts of silt, sand, and clay. Brick, concrete, coal ash, and asphalt fragments were very common throughout the fill; however, odors or staining associated with OHM were not observed. PID readings ranged from 0.0 to 55.0 parts per million.
- Organic Soil – A 5 to 10-foot-thick layer of organic soil was encountered beneath the fill, approximately 9 to 12 feet deep, in B302(MW) and B303(MW). The organic soil consisted of black organic silt with layers of peat or brown to gray peat with silt lenses.
- Glacial Outwash – A layer of glacial outwash consisting of sand and gravel was encountered in all of the borings, overlain either by the fill or by the peat. The layer thickness varied from 25 to 65 feet in the most recent borings. Up to 71.5 feet of glacial outwash was encountered in B102. The glacial outwash tended to be thinner on the southwest portion of the site and thicker in the northeast portion of the site. The glacial outwash generally consisted of widely graded to narrowly graded sand with silt and gravel. The silt and gravel content varied across the site.

- Weathered Bedrock/Bedrock – Highly weathered to slightly weathered Roxbury Conglomerate was encountered below the glacial till. The Roxbury Conglomerate is a sedimentary rock with clasts (rounded to subrounded gravel to boulder size rocks) set in a finer-grained (sand and silt size particles) sedimentary matrix. In most of the borings, the upper 5 to 15 feet of bedrock was moderately to highly weathered. The weathering appeared to affect the sand matrix more than the clasts resulting in recoveries of rounded to subrounded gravel missing the sand and silt matrix that was washed away due to the coring process. Typically, the degree of weathering decreased with depth which resulted in better recoveries with depth. Recoveries and Rock Quality Designations (RQDs) ranged from 17% to 100% and from 0% to 69%, respectively.

3.5 Hydrogeology

Depth to groundwater measured from ground surface on March 5, 2017 ranged from approximately 8 to 13 feet deep. Based on the results of GEI's groundwater elevation survey, groundwater flows from south to north toward the Back Bay Fens.

4. RAM Objectives, Plan, and Schedule (310 CMR 40.0444[1][c])

The planned RAM activities are limited in scope and complexity and so meet the performance criteria described in 310 CMR 40.0441(2). Soil is being excavated across the Site as a risk reduction measure. The planned RAM activities, as further described in Section 4.2, are common activities performed on construction projects in urban areas.

4.1 Objectives

The objective of this RAM Plan is to excavate, treat if necessary, and otherwise handle soil, including transport for off-site reuse, disposal, recycling, and/or treatment. Management of groundwater is not anticipated. The RAM Plan has been developed to be protective of construction workers and surrounding receptors from direct contact with potentially contaminated soil and/or fugitive dust inhalation.

This RAM is being performed with a grant from the MassDevelopment's Brownfields Redevelopment Fund.

4.2 Planned RAM Activities

4.2.1 Hot Spot and Soil Mound Pre-Characterization

We will pre-characterize the lead hot spot and soil mound to categorize soil for off-site disposal. The lead hot spot is estimated to be approximately 250 cubic yards (approximately 400 tons) and the soil mound is estimated to be approximately 10,000 cubic yards (approximately 16,000 tons). Soil samples will be collected using a track-mounted Geoprobe rig.

The hot spot will be disposed of at an out-of-state landfill because of the leachable level of lead. The sampling frequency for out-of-state landfills is typically one sample per 200 tons; therefore, we will collect three soil samples from the hot spot for laboratory testing.

The soil mound will be characterized at a frequency of one sample per 500 cubic yards; therefore, we will collect 20 samples from approximately 15, 5- to 10-foot borings.

Soil samples will be analyzed for a full disposal characterization suite including VOC. SVOCs including pyridine, TPH, RCRA 8 metals, PCBs, conductivity, corrosivity, reactivity, ignitability, and for a subset of samples pesticides, herbicides, and leachable metals.

We will prepare a soil characterization report for the soil mound identifying soil disposal options and if additional testing is required for each option.

If required, we will conduct additional assessment activities to further characterize soil conditions prior to excavation and off-site transport, or to provide confirmatory data for regulatory compliance.

4.2.2 Soil Excavation and Off-site Reuse, Recycling, and/or Disposal

The total volume of soil to be removed off-site under this RAM is limited to the funding available by the MassDevelopment Grant. The total estimated quantity of lead hot spot soil requiring excavation and off-site disposal is approximately 250 cubic yards. The total estimated quantity of the soil mound identified for excavation and off-site disposal is approximately 200 cubic yards. Based on existing Site data, we have estimated that portions of the soil mound may need to be disposed at a RCRA Subtitle D non-hazardous, lined landfill or recycled at an asphalt batch recycling plant. These soils have the highest concentrations of lead and/or petroleum-related compounds and contribute most to the potential risk to human health. The remediation will be implemented to optimize the removal of these more contaminated soils.

Approximately 450 cubic yards of soil may be excavated as part of the RAM. Soil will be excavated to depths up to approximately 7 feet below the current grade on the Property. Management of soil as Remediation Waste is further described in Section 5.

The hot spot excavation will be backfilled with soil from the mound that is deemed acceptable for on-site reuse. The soil mound will not require any backfill since partial removal of the mound will not result in a below grade excavation.

4.2.3 Soil Handling

The soil is likely to be loaded directly onto trucks and transported off site for reuse, recycling, and/or disposal at an appropriate receiving facility. The soil may be re-used onsite as backfill. Soil may also be temporarily stockpiled on-site while awaiting off-site transport.

If stockpiled, excavated material will be separated based on the anticipated disposal location (based on existing pre-characterization) or based on field screening results. At a minimum, excavated material with visible stains or unnatural odor indicative of oil and hazardous materials (OHM) will be separated from material that does not exhibit these characteristics. Soil will be stockpiled on a 6-mil-thick, polyethylene barrier or other impervious surface, if necessary, and covered with a 6-mil-thick, polyethylene barrier in bermed areas where storm water runoff is diverted from the stockpile(s).

An excavated materials management specification is part of the contract documents and includes provisions for the contractor to follow, including handling, stockpiling, storing, loading, reusing, recycling, disposing, transporting, and tracking of excavated material. A copy of this specification is in Appendix C **<PENDING>**.

4.2.4 Soil Screening and Additional Characterization

We will periodically screen soil on site as it is excavated. The screening will be olfactory observations combined with jar-headspace measurements of VOCs using a PID. If we identify material during excavation as having characteristics inconsistent with those identified during pre-characterization, the material will be stockpiled separately and further characterized.

4.2.5 On-site Treatment of TCLP Contaminated Soils

Up to approximately 250 cubic yards of soil in the lead hot spot has been categorized as potentially hazardous waste if excavated and disposed off site because the TCLP results for leachable lead were greater than 5 milligrams per liter (mg/L). Total lead concentrations in this area were up to 13,000 milligrams per kilogram (mg/kg). The soil will be treated prior to excavation and off-site removal. A proprietary reagent will be applied to the affected soil and mixed with the bucket of an excavator. The mixing zone will be constantly sprayed with water to suppress dust and to activate reagents.

After treatment is completed, confirmatory samples will be collected to ensure that the soil no longer contains leachable lead greater than 5 mg/L. Treated material will be transported off site to an out-of-state non-hazardous landfill. Management of soil as Remediation Waste is further described in Section 5. Because this treatment will include applying Remedial Additives within approximately 100 feet of occupied residences, a Remedial Additives Plan has been developed, per 310 CMR 40.0046(3) (Appendix D). On-site treatment, if conducted, will not be performed for at least 30 days following submittal of this RAM Plan pending presumptive approval from MassDEP.

4.2.6 Construction Dewatering and Groundwater Management

We do not anticipate that dewatering will be necessary to manage groundwater during construction. Excavations will generally be shallow and are likely to be above the groundwater table. If groundwater is encountered during excavation, the construction dewatering effluent will be recharged on site. Recharging of the construction dewatering effluent will be performed in accordance with the MCP (310 CMR 40.0045[4]).

4.2.7 *Underground Storage Tank/Drum Removal*

Although not expected, if evidence of a possible drum or underground storage tank (UST) is encountered, work will be temporarily stopped. The area will be screened for the presence of OHM using a PID, and visual and olfactory observations. Material contained within the drum/UST will be evaluated by the LSP or representative. The materials and drum/UST will be excavated and disposed of properly. If a new MCP reportable condition is identified during drum/UST removal, MassDEP will be notified and the appropriate MCP response actions will be performed.

4.2.8 *Mechanical Screening*

If required, mechanical screening (separation) of buried debris, rubble and oversize cobbles and boulders from soil will be performed prior to off-site disposal to reduce disposal volumes. Materials which do not exhibit visual/olfactory evidence of contamination will be disposed off site as solid waste.

4.3 *Schedule*

The RAM is expected to be completed in 2021.

5. Remediation Waste Management (310 CMR 40.0444[1][d])

Approximately 450 cubic yards of soil may be excavated as part of the project. On behalf of the BPDA, we are requesting approval to manage up to 1,000 cubic yards of soil as Remediation Waste during the RAM, which accounts for potential changes in scope or design.

As part of the RAM, we will pre-characterize soil to be excavated to identify the likely soil management categories for Remediation Waste. Following pre-characterization, soil to be disposed off-site will be classified as follows (further defined in Table 4):

- Category A – Restricted Reuse (<RCS-1 material)
- Category B – Reuse as Unlined Landfill Cover in Massachusetts
- Category C – Reuse as Lined Landfill Cover in Massachusetts
- Category D – Recycling at Asphalt Batch Plant
- Category E – Disposal in Out-of-State Landfill as Non-Hazardous Waste
- Category F-1 – On-Site Treatment of Hazardous Waste and Disposal in Out-of-State Landfill as Non-Hazardous Waste
- Category F-2 – Disposal in Out-of-State Landfill as Hazardous Waste

Soil from the mound will be reused as backfill in the lead-contaminated soil hot spot excavation.

6. Worker Protection and Environmental Monitoring (310 CMR 40.0444[1][e])

The contractor will prepare and implement a project Health and Safety Plan (HASP) to protect Site workers from potentially contaminated material. A health and safety specification is part of the contract documents and includes provisions for the contractor to follow. A copy of this specification is in Appendix C <PENDING>.

Air monitoring for the health and safety of construction workers will be performed by the contractor during excavation activities. Dust monitoring will be performed by GEI at the Property perimeter for the health and safety of surrounding receptors. The action level for dust (measured as PM10) at the perimeter will be finalized in the specifications but at a minimum will be 0.150 milligrams per cubic meter in accordance with 310 CMR 6.00.

Dust mitigating measures, such as wetting down soils with water, will be conducted if the dust generation action levels are exceeded. The contractor will take necessary measures and provide equipment and/or materials to minimize dust from rising and blowing across the site, and from impacting neighboring property.

GEI as LSP will prepare our own HASP for the protection of GEI employees. If action levels as defined in our HASP are exceeded, we will notify the BPDA and the contractor who will notify workers in the immediate area.

7. Federal, State and Local Permits (310 CMR 40.0444[1][f])

Remediation Waste will be transported off site under a BOL. BPDA will sign all BOLs and/or manifests as the generator in accordance with 310 CMR 40.0034/0035.

No other permits are required to perform the RAM.

8. Certification (310 CMR 40.0444[1][g])

The seal and signature of the LSP who will oversee this RAM is on MassDEP RAM Transmittal Form (BWSC106) in Appendix A.

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9. Financial Assurance (310 CMR 40.0444[1][h])

The generation of Remediation Waste will be limited to up to approximately 1,000 cubic yards of soil. Therefore, the certification required by 310 CMR 40.0442(5) if greater than 1,500 cubic yards of material are to be generated is not required.

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10. Limitations

This report was prepared for the use of BPDA and MassDEP, exclusively. Our conclusions are based on the information reported in this document. Additional information not available to GEI at the time this report was prepared, and additional information obtained in the future may result in a modification of the findings of this investigation. This report has been prepared in accordance with generally accepted engineering and hydrogeological practices. No warranty, express or implied, is made.

11. References

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Tables

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Table 1. Chemical Testing Results - Soil (Weston & Sampson)
 Release Abatement Measure Plan
 Parcel P-3, Tremont Street & Whittier Streets
 Boston, Massachusetts

Analyte	Method	Units	MCP RCS-1	Method 1 S-1/GW-2	Method 1 S-1/GW-3	Sample ID:	B104-S1	B104-S2	B104-S3	B105-S1	B105-S2	B105-S3	B106-S1	B106-S2	B106-S3	B107-S1	B107-S2	B107-S3	B108-S1	B108-S2	B108-S3	B109-S1	B109-S2	B109-S3	B110-S1	B110-S2	B110-S3	
						Sample Date:	1-3	4-6	7-9	1-3	4-6	7-9	1-3	4-6	7-9	1-3	4-6	7-9	1-3	4-6	7-9	1-3	4-6	7-9	1-3	4-6	7-9	1-3
						Sample Depth (ft):	W&S	W&S	W&S	W&S	W&S	W&S	W&S	W&S	W&S	W&S	W&S	W&S	W&S	W&S	W&S	W&S	W&S	W&S	W&S	W&S	W&S	
						Sampled By:																						
Volatiles Organic Compounds (VOCs)	8260C	mg/kg					NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
Benzene			2	40	40																							
Trichloroethene			0.3	0.3	30																							
Xylenes, Total			100	100	500																							
n-Butylbenzene			NS	NS	NS																							
sec-Butylbenzene			NS	NS	NS																							
tert-Butylbenzene			100	NS	NS																							
Isopropylbenzene			1000	NS	NS																							
Naphthalene			4	20	500																							
n-Propylbenzene			100	NS	NS																							
1,2,4-Trimethylbenzene			100	NS	NS																							
Volatile Petroleum Hydrocarbons (VPH)	VPH-04-1.1	mg/kg					NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
C9-C10 Aromatics			100	100	100																							
C5-C8 Aliphatics, Adjusted			100	100	100																							
C9-C12 Aliphatics, Adjusted			1000	1000	1000																							
Semivolatile Organic Compounds (SVOCs)	8270D	mg/kg																										
Acenaphthene			4	1000	1000		1	0.14	1.1	1.9	1.3	0.091	0.39	0.91	0.47	0.17	0.41	1	0.22	0.21	0.057	0.48	0.64	0.44	0.29	0.19	0.49	
Acenaphthylene			1	600	10		0.24	0.041	0.24	0.35	< 0.28	< 0.055	0.11	0.16	0.11	< 0.058	< 0.11	0.12	< 0.058	0.09	< 0.055	0.088	0.083	0.092	0.04	0.059	< 0.29	
Anthracene			1000	1000	1000		2	0.36	2.3	3.9	2.8	0.29	0.96	1.7	0.98	0.39	0.98	4.9	0.43	0.4	0.15	1.1	1.3	1	0.67	0.46	1.2	
Benzo(a)anthracene			7	7	7		5.5	0.88	6	8.1	4.9	0.67	1.9	3.8	1.9	1.1	2.1	4.5	1.1	1.1	0.35	2	2.7	1.9	1.7	1.1	2.5	
Benzo(a)pyrene			2	2	2		5.6	0.89	5.9	7.5	4.1	0.64	1.8	3.6	1.8	1	1.9	4.1	1.1	1.1	0.34	1.9	2.5	2	1.7	1.2	2.5	
Benzo(b)fluoranthene			7	7	7		4.2	0.96	4.2	5.3	3.2	0.45	1.2	2	1.2	0.73	1.4	2.4	0.79	0.8	0.25	1.3	1.9	1.8	1.8	1.2	2.5	
Benzo(g,h,i)perylene			1000	1000	1000		1.4	0.19	1.5	5.8	2.8	0.5	0.97	1.5	0.79	0.48	0.73	1.5	0.47	0.14	0.11	0.58	0.8	0.55	0.43	0.27	0.52	
Benzo(k)fluoranthene			70	70	70		4.5	1	5	5.5	3.3	0.53	1.3	2.1	1.3	0.74	1.5	2.5	0.78	0.82	0.27	1.5	2.1	1.8	1.7	1.2	2.7	
Chrysene			70	70	70		5.7	0.84	6.3	8.7	4.8	0.7	1.9	4	1.9	1.1	2.1	4.7	1.1	1.2	0.37	2	2.7	2	1.8	1.1	2.7	
Dibenzo(a,h)anthracene			0.7	0.7	0.7		0.65	0.078	0.67	2	1	0.014	0.41	0.64	0.34	0.21	0.33	0.66	0.2	0.19	< 0.055	0.29	0.4	0.25	0.21	0.12	< 0.29	
Dibenzofuran			100	NS	NS		NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
Di-n-butylphthalate			50	NS	NS		NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
Fluoranthene			1000	1000	1000		12	2	13	16	11	1.4	5.8	9.7	5.3	2.1	4.1	11	2.3	3.6	0.67	6	8	5.6	4.5	3.1	5.3	
Fluorene			1000	1000	1000		1.1	0.15	1.1	1.9	1.5	0.11	0.41	0.82	0.44	0.14	0.38	0.88	0.18	0.22	< 0.055	0.48	0.64	0.43	0.26	0.2	0.63	
Indeno(1,2,3-cd)pyrene			7	7	7		1.5	0.2	1.6	4.8	2.5	0.41	0.98	1.5	0.8	0.51	0.81	1.6	0.51	0.48	0.12	0.67	0.92	0.62	0.47	0.29	0.58	
2-Methylnaphthalene			0.7	80	300		0.4	0.033	0.26	0.82	0.51	< 0.055	0.15	0.3	0.15	< 0.058	0.14	0.29	< 0.058	0.096	< 0.055	0.17	0.17	0.15	0.069	0.61	< 0.29	
Naphthalene			4	20	500		0.7	0.051	0.61	1.6	1.1	0.071	0.25	0.56	0.27	0.085	0.2	0.4	0.07	0.19	< 0.055	0.28	0.29	0.32	0.11	0.11	< 0.29	
Phenanthrene			10	500	500		9.6	1.2	12	15	11	1.2	5.1	6.9	4.6	1.7	4	9.7	1.8	3	0.6	5.4	6.7	4.9	2.4	2.3	5	
Pyrene			1000	1000	1000		10	1.9	13	14	9.1	1.3	4.8	7.9	4.6	1.9	3.7	9	2	2.8	0.57	5	6.3	5.4	4.2	2.8	6.6	
Extractable Petroleum Hydrocarbons (EPH)	EPH-04-1.1	mg/kg					NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
C9-C18 Aliphatics			1000	1000	1000																							
C11-C22 Aromatics, Adjusted			1000	1000	1000																							
C19-C36 Aliphatics			3000	3000	3000																							
Acenaphthene			4	1000	1000																							
Acenaphthylene			1	600	10																							
Anthracene			1000	1000	1000																							
Benzo(a)anthracene			7	7	7																							
Benzo(a)pyrene			2	2	2																							
Benzo(b)fluoranthene			7	7	7																							
Benzo(g,h,i)perylene			1000	1000	1000																							
Benzo(k)fluoranthene			70	70	70																							
Chrysene			70	70	70																							
Dibenzo(a,h)anthracene			0.7	0.7	0.7																							
Fluoranthene			1000	1000	1000																							
Fluorene			1000	1000	1000																							
Indeno(1,2,3-cd)Pyrene			7	7	7																							
2-Methylnaphthalene			0.7	80	300																							
Naphthalene			4	20	500																							
Phenanthrene			10	500	500																							
Pyrene			1000	1000	1000																							
Chlorinated Herbicides	815																											

Table 2. Chemical Testing Results - Groundwater (Weston & Sampson and GEI)
Release Abatement Measure Plan
Parcel P-3, Tremont Street & Whittier Streets
Boston, Massachusetts

Analyte	Method	Units	MCP RCGW-2	Method 1 GW-2	Method 1 GW-3	Well ID:		WS-2		WS-3		WS-4		WS-5		WS-6		WS-7		WS-8		WS-9		WS-10	
						Sample ID:	Sample Date:	WS-1	WS-2	WS-3	WS-3	WS-4	WS-5	WS-5	WS-6	WS-7	WS-7	WS-8	WS-9	WS-9	WS-10	WS-10			
Screen Interval (ft. below ground surface):						WS-1	WS-2	WS-2	WS-3	WS-3	WS-4	WS-5	WS-5	WS-6	WS-7	WS-7	WS-8	WS-9	WS-9	WS-10	WS-10	WS-10	WS-10	WS-10	WS-10
Sampled By:						12/12/1996	12/12/1996	9/10/2001	12/12/1996	2/6/2001	12/12/1996	12/12/1996	2/6/2001	12/12/1996	12/12/1996	2/6/2001	12/12/1996	12/12/1996	2/6/2001	12/12/1996	12/12/1996	2/6/2001	12/12/1996	12/12/1996	2/6/2001
Sampled By:						Unknown W&S	Unknown W&S	Unknown W&S	Unknown W&S	Unknown W&S	Unknown W&S	Unknown W&S	Unknown W&S	Unknown W&S	Unknown W&S	Unknown W&S	Unknown W&S	Unknown W&S	Unknown W&S	Unknown W&S	Unknown W&S	Unknown W&S	Unknown W&S	Unknown W&S	Unknown W&S
MCP Volatile Organic Compounds (VOCs)	8260C	ug/l				NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Tetrachloroethene			50	50	30000																				
Vinyl chloride			2	2	50000																				
Trichloroethene			5	5	5000																				
cis-1,2-Dichloroethene			20	20	50000																				
1,2-Dichloroethene (total)			20	20	50000																				
Ethyl ether			10	NS	NS																				
1,4-Dioxane			NS	6000	50000																				
Volatile Organic Compounds (VOCs) by GC/MS	8260C	ug/l						NT		NT			NT						NT				NT		NT
Chloroform			50	50	20000	< 2.0	< 2.0		< 2.0		< 2.0	< 2.0		9.1	< 2.0	< 2.0		< 2.0	< 2.0		< 2.0	< 2.0		< 5.8	
p-Isopropyltoluene			100	NS	NS	< 2.0	< 2.0		< 2.0	< 2.0	< 2.0	< 2.0			< 2.0	< 2.0		< 2.0	< 2.0		< 2.0	< 2.0		< 2.0	
Tetrachloroethene			50	50	30000	< 2.0	< 2.0		< 2.0	< 2.0	< 2.0	< 2.0			< 2.0	< 2.0		< 2.0	< 2.0		< 2.0	< 2.0		< 2.0	
Trichloroethene			5	5	5000	< 2.0	< 2.0		< 2.0	< 2.0	2.2	< 2.0			< 2.0	< 2.0		< 2.0	< 2.0		< 2.0	< 2.0		< 2.0	
Volatile Organic Compounds (VOCs) by GC/MS-SIM	8260C BY SIM	ug/l				NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
1,4-Dioxane			NS	6000	50000																				
Volatile Petroleum Hydrocarbons (VPH)	VPH-04-1.1	ug/l				NT	NT		NT		NT	NT		NT	NT		NT	NT		NT		NT		NT	NT
C9-C10 Aromatics			4000	4000	50000			< 25		< 25				< 25		< 25		< 25		NT		NT		< 25	< 25
C5-C8 Aliphatics, Adjusted			3000	3000	50000			< 100		< 100				< 100		< 100		< 100		NT		NT		< 100	< 100
C9-C12 Aliphatics, Adjusted			5000	5000	50000			< 25		< 25				< 25		< 25		< 25		NT		NT		< 25	< 25
Semivolatile Organic Compounds (SVOCs) by GC/MS-SIM	8100 or 8270D BY SIM	ug/l				NT		NT		NT		NT		NT	NT		NT	NT		NT		NT		NT	NT
Acenaphthene			6000	NS	10000			ND		ND		ND								ND		ND		ND	ND
Fluoranthene			200	NS	200			ND		ND		ND								ND		ND		ND	ND
Anthracene			30	NS	30			ND		ND		ND								ND		ND		ND	ND
Fluorene			40	NS	40			ND		ND		ND								ND		ND		ND	ND
Phenanthrene			10000	NS	10000			ND		ND		ND								ND		ND		ND	ND
Pyrene			20	NS	20			ND		ND		ND								ND		ND		ND	ND
1-Methylnaphthalene			NS	NS	NS			ND		ND		ND								ND		ND		ND	ND
Extractable Petroleum Hydrocarbons (EPH)	EPH-04-1.1	ug/l				NT	NT		NT		NT	NT		NT	NT		NT	NT		NT		NT		NT	NT
C9-C18 Aliphatics			5000	5000	50000			< 100		< 100		< 100		< 100		< 100		< 100		NT		NT		< 100	< 100
C19-C36 Aliphatics			50000	NS	50000			140		< 100		< 100		< 100		< 100		< 100		NT		NT		< 100	< 100
C11-C22 Aromatics, Adjusted			5000	50000	5000			< 100		< 100		< 100		< 100		< 100		< 100		NT		NT		< 100	< 100
Naphthalene			700	700	20000			< 1.0		< 0.10		< 0.10		< 0.10		< 0.10		< 0.10		NT		NT		< 0.10	< 0.10
2-Methylnaphthalene			2000	2000	20000			< 1.0		< 0.10		< 0.10		< 0.10		< 0.10		< 0.10		NT		NT		< 0.10	< 0.10
Acenaphthene			6000	NS	10000			< 1.0		< 0.10		< 0.10		< 0.10		< 0.10		< 0.10		NT		NT		< 0.10	< 0.10
Fluorene			40	NS	40			< 1.0		< 0.10		< 0.10		< 0.10		< 0.10		< 0.10		NT		NT		< 0.10	< 0.10
Phenanthrene			10000	NS	10000			< 1.0		< 0.10		< 0.10		< 0.10		< 0.10		< 0.10		NT		NT		< 0.10	< 0.10
Anthracene			30	NS	30			< 1.0		< 0.10		< 0.10		< 0.10		< 0.10		< 0.10		NT		NT		< 0.10	< 0.10
Fluoranthene			200	NS	200			< 1.0		< 0.10		< 0.10		< 0.10		< 0.10		< 0.10		NT		NT		< 0.10	< 0.10
Pyrene			20	NS	20			< 1.0		< 0.10		< 0.10		< 0.10		< 0.10		< 0.10		NT		NT		< 0.10	< 0.10
Microextractables by GC		ug/l				NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
1,2-Dibromoethane			2	2	50000																				
Polychlorinated Biphenyls (PCBs) by GC	608	ug/l				NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Total PCBs			5	5	10																				
Total Metals		ug/l				NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Antimony, Total	6020A		8000	NS	8000			NT		NT		NT		NT		NT		NT		NT		NT		NT	NT
Arsenic, Total	6020A		900	NS	900			< 0.01		NT		NT		< 0.01		NT		NT		< 0.02		< 0.01		NT	NT
Barium, Total	6020A		50000	NS	50000			< 0.05		NT		NT		0.11		NT		NT		0.15		0.11		NT	NT
Cadmium, Total	6020A		4	NS	4			< 0.005		NT		NT		< 0.005		NT		NT		< 0.005		< 0.005		NT	NT
Chromium, Total	6020A		300	NS	300			< 0.03		NT		NT		< 0.03		NT		NT		< 0.03		< 0.03		NT	NT
Chromium, Hexavalent	6020A		300	NS	300			NT		NT		NT		NT		NT		NT		NT		NT		NT	NT
Copper, Total	6020A		NS	NS	NS			NT		NT		NT		NT		NT		NT		NT		NT		NT	NT
Iron, Total	200.7		NS	NS	NS			NT		NT		NT		NT		NT		NT		NT		NT		NT	NT
Lead, Total	6020A		10	NS	10			< 0.005		< 5.0		< 0.005		< 5.0		< 0.005		< 5.0		< 0.010		< 0.010		< 5.0	< 5.0
Mercury, Total	245.1		20	NS	20			< 0.0002		NT		< 0.0002		NT		< 0.0002		< 0.0002		< 0.0002		< 0.0002		NT	NT
Nickel, Total	6020A		200	NS	200			NT		NT		NT		NT		NT		NT		NT		NT		NT	NT
Selenium, Total	6020A		100	NS	100			< 0.025		NT		NT		< 0.025		NT		NT		< 0.025		< 0.025		NT	NT
Silver, Total	6020A		7	NS	7			< 0.007		NT		NT		< 0.007		NT		NT		< 0.007		< 0.007		NT	NT
Zinc, Total	6020A		900	NS	900			NT	</																

Table 2. Chemical Testing Results - Groundwater (Weston & Sampson and GEI)
Release Abatement Measure Plan
Parcel P-3, Tremont Street & Whittier Streets
Boston, Massachusetts

Analyte	Method	Units	MCP RCGW-2	Method 1 GW-2	Method 1 GW-3	Well ID:	WS-11	WS-12	WS-12	WS-12	WS-13	B205 (OW)	B(MW)301	B(MW)302	B(MW)303	B(MW)305	B(MW)306	B(MW)307	B(MW)308
						Sample ID:	Sample Date:	Sample Date:	Sample Date:	Sample Date:	Sample Date:	Sample Date:	Sample Date:	Sample Date:	Sample Date:	Sample Date:	Sample Date:	Sample Date:	Sample Date:
Screen Interval (ft. below ground surface):						WS-11	WS-12	WS-12 (DUP)	WS-12	WS-13	B205 (OW)	B(MW)301	B(MW)302	B(MW)303	B(MW)305	B(MW)306	B(MW)307	B(MW)308	
Sampled By:						W&S	W&S	W&S	W&S	W&S	W&S	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
MCP Volatile Organic Compounds (VOCs)	8260C	ug/l					NT	NT	NT	NT	NT							NT	
Tetrachloroethene			50	50	30000							< 1	< 1	19	< 1	1.5	3.2		1
Vinyl chloride			2	2	50000							< 1	< 1	< 1	< 1	< 1	6.3		< 1
Trichloroethene			5	5	5000							< 1	< 1	5	< 1	1.8	93		36
cis-1,2-Dichloroethene			20	20	50000							< 1	< 1	7.2	< 1	< 1	64		6.2
1,2-Dichloroethene (total)			20	20	50000							< 1	< 1	7.2	< 1	< 1	64		6.2
Ethyl ether			10	NS	NS							< 2	< 2	< 2	< 2	< 2	< 2		2.4
1,4-Dioxane			NS	6000	50000							NT	< 250	NT	< 250	NT	< 250		< 250
Volatile Organic Compounds (VOCs) by GC/MS	8260C	ug/l								NT	NT								
Chloroform			50	50	20000		< 2.0	< 2.0	< 2.0										< 0.75
p-Isopropyltoluene			100	NS	NS		< 2.0	2.8	2.6										0.55
Tetrachloroethene			50	50	30000		< 2.0	< 2.0	< 2.0										0.92
Trichloroethene			5	5	5000		< 2.0	< 2.0	< 2.0										1.3
Volatile Organic Compounds (VOCs) by GC/MS-SIM	8260C BY SIM	ug/l					NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
1,4-Dioxane			NS	6000	50000														< 3
Volatile Petroleum Hydrocarbons (VPH)	VPH-04-1.1	ug/l					NT	NT	NT	NT	NT								
C9-C10 Aromatics			4000	4000	50000				< 25			< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
C5-C8 Aliphatics, Adjusted			3000	3000	50000				< 100			< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
C9-C12 Aliphatics, Adjusted			5000	5000	50000				< 25			< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Semivolatile Organic Compounds (SVOCs) by GC/MS-SIM	8100 or 8270D BY SIM	ug/l					NT		NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Acenaphthene			6000	NS	10000			ND	ND										1.6
Fluoranthene			200	NS	200			ND	ND										1.2
Anthracene			30	NS	30			ND	ND										0.89
Fluorene			40	NS	40			ND	ND										1.5
Phenanthrene			10000	NS	10000			ND	ND										4.3
Pyrene			20	NS	20			ND	ND										0.76
1-Methylnaphthalene			NS	NS	NS			ND	ND										0.4
Extractable Petroleum Hydrocarbons (EPH)	EPH-04-1.1	ug/l					NT	NT	NT	NT	NT								
C9-C18 Aliphatics			5000	5000	50000				< 100			< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
C19-C36 Aliphatics			50000	NS	50000				< 100			< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
C11-C22 Aromatics, Adjusted			5000	50000	5000				160			< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
Naphthalene			700	700	20000				< 0.10			< 0.4	< 0.412	< 0.4	< 0.4	0.708	< 0.417	1.45	0.502
2-Methylnaphthalene			2000	2000	20000				< 0.10			< 0.4	< 0.412	< 0.4	< 0.4	< 0.4	< 0.417	0.652	< 0.4
Acenaphthene			6000	NS	10000				< 0.10			< 0.4	< 0.412	< 0.4	< 0.4	< 0.4	< 0.417	2.25	< 0.4
Fluorene			40	NS	40				< 0.10			< 0.4	< 0.412	< 0.4	< 0.4	< 0.4	< 0.417	2.1	< 0.4
Phenanthrene			10000	NS	10000				< 0.10			< 0.4	< 0.412	< 0.4	< 0.4	0.84	< 0.417	5.53	< 0.4
Anthracene			30	NS	30				< 0.10			< 0.4	< 0.412	< 0.4	< 0.4	< 0.4	< 0.417	0.994	< 0.4
Fluoranthene			200	NS	200				< 0.10			< 0.4	< 0.412	< 0.4	< 0.4	< 0.4	< 0.417	1.57	< 0.4
Pyrene			20	NS	20				< 0.10			< 0.4	< 0.412	< 0.4	< 0.4	< 0.4	< 0.417	0.942	< 0.4
Microextractables by GC		ug/l					NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
1,2-Dibromoethane			2	2	50000														< 0.01
Polychlorinated Biphenyls (PCBs) by GC	608	ug/l					NT	NT	NT	NT	NT								
Total PCBs			5	5	10														ND
Total Metals		ug/l										NT	NT	NT	NT	NT	NT	NT	NT
Antimony, Total	6020A		8000	NS	8000		NT	NT	NT	NT	NT								< 4
Arsenic, Total	6020A		900	NS	900		< 0.01	< 0.01	NT	NT	NT								< 0.5
Barium, Total	6020A		50000	NS	50000		< 0.05	0.12	NT	NT	NT								NT
Cadmium, Total	6020A		4	NS	4		< 0.005	< 0.005	NT	NT	NT								0.41
Chromium, Total	6020A		300	NS	300		< 0.03	< 0.03	NT	NT	NT								< 1
Chromium, Hexavalent	6020A		300	NS	300		NT	NT	NT	NT	NT								< 10
Copper, Total	6020A		NS	NS	NS		NT	NT	NT	NT	NT								1.49
Iron, Total	200.7		NS	NS	NS		NT	NT	NT	NT	NT								< 50
Lead, Total	6020A		10	NS	10		< 0.010	< 0.005	< 5.0	< 12									< 0.5
Mercury, Total	245.1		20	NS	20		< 0.0002	< 0.0002	NT	NT	NT								< 0.2
Nickel, Total	6020A		200	NS	200		NT	NT	NT	NT	NT								2.45
Selenium, Total	6020A		100	NS	100		< 0.005	< 0.025	NT	NT	NT								< 5
Silver, Total	6020A		7	NS	7		< 0.007	< 0.007	NT	NT	NT								< 0.4
Zinc, Total	6020A		900	NS	900		NT	NT	NT	NT	NT								< 10
General Chemistry		ug/l										NT	NT	NT	NT	NT	NT	NT	NT
Solids, Total Suspended	2540D		NS	NS	NS		NT	NT	NT	NT	NT								< 5000
Cyanide, Total	4500CN-CE		30	NS	30		NT	NT	NT	NT	NT								< 5 F-
Chlorine, Total Residual	4500CL-D		NS	NS	NS		NT	NT	NT	NT	NT								< 20
TPH	8100M or 1664A		NS	NS	NS		ND	ND	ND	ND	ND								< 4000
Phenolics, Total	420.1		NS	NS	NS		NT	NT	NT	NT	NT								< 30
Anions by Ion Chromatography		ug/l										NT	NT	NT	NT	NT	NT	NT	NT
Chloride	300.0		NS	NS	NS		NT	NT	NT	NT	NT								1,200,000

- General Notes:**
- Only analytes detected in at least one sample are reported here. For a complete list of analytes see the laboratory data sheets.
 - "<" = Analyte not detected at a concentration above the laboratory reporting limit.
 - Method 1 standards are cited from the Massachusetts Contingency Plan 310 CMR 40.0000 (MCP), with revisions effective June 20, 2014.
 - ug/L = micrograms per liter
 - Values in bold exceed Method 1 standards.
 - NS = No Method 1 standard established.
 - ug/L = micrograms per liter
 - ND = Analyte(s) not detected
 - W&S results: VOCs by 8260, PAHs by 8100, TPH by 8100M; GEI results: VOCs by 8260C, PAHs by 8270-SIM, TPH by 1664A

Qualifiers:
F- The result has a low bias due to matrix spike recovery below lower control limits.

Table 3. Chemical Testing Results - Soil (GEI)
 Release Abatement Measure Plan
 Parcel P-3, Tremont Street & Whittier Streets
 Boston, Massachusetts

Analyte	Method	Units	MCP RCS-1	Method 1 S-1/GW-2	Method 1 S-1/GW-3	Sample ID:	TP-101(0-3')	TP-103(0-3')	TP-104(0-3')	TP-105(10')	TP-105(0-10')	TP-106(0-2')	TP-107(0-3')	TP-108(8')	TP-108(0-8')	B301-S7(10-15')	B301-COMP (0-3')	B302-S4 (0-8')	B303-S9 (0-5')
						Sample Date:	2/26/2017	2/26/2017	2/26/2017	2/26/2017	2/26/2017	2/26/2017	2/26/2017	2/26/2017	2/26/2017	2/26/2017	2/26/2017	2/26/2017	2/26/2017
						Sample Depth (ft):	0 - 3	0 - 3	0 - 3	10	0 - 10	0 - 2	0 - 3	8	0 - 8	12.75	0 - 3	6.0	20
						Sampled By:	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Volatile Organic Compounds (VOCs)	8260C	mg/kg					NT	NT	NT		NT	NT	NT	NT	NT		NT		
Benzene			2	40	40					< 0.064						< 0.03		< 0.05	< 0.053
Trichloroethene			0.3	0.3	30					< 0.064						< 0.03		< 0.05	< 0.053
Volatile Petroleum Hydrocarbons (VPH)	VPH-04-1.1	mg/kg					NT	NT	NT	NT	NT	NT	NT	NT	NT		NT		
C9-C10 Aromatics			100	100	100									< 2.69		< 2.28		< 2.62	< 2.77
C5-C8 Aliphatics, Adjusted			100	100	100									< 2.69		< 2.28		< 2.62	< 2.77
C9-C12 Aliphatics, Adjusted			1000	1000	1000									< 2.69		< 2.28		< 2.62	< 2.77
Semivolatile Organic Compounds (SVOCs)	8270D	mg/kg					NT	NT	NT	NT	NT	NT	NT	NT	NT		NT	NT	NT
Acenaphthene			4	1000	1000					1.1									
Acenaphthylene			1	600	10					< 0.31									
Anthracene			1000	1000	1000					2.3									
Benzo(a)anthracene			7	7	7					5.5									
Benzo(a)pyrene			2	2	2					5.1									
Benzo(b)fluoranthene			7	7	7					6.3									
Benzo(g,h,i)perylene			1000	1000	1000					2.5									
Benzo(k)fluoranthene			70	70	70					2.2									
Chrysene			70	70	70					5									
Dibenzo(a,h)anthracene			0.7	0.7	0.7					0.66									
Dibenzofuran			100	NS	NS					0.74									
Di-n-butylphthalate			50	NS	NS					< 0.38									
Fluoranthene			1000	1000	1000					11									
Fluorene			1000	1000	1000					0.98									
Indeno(1,2,3-cd)pyrene			7	7	7					2.9									
2-Methylnaphthalene			0.7	80	300					< 0.46									
Naphthalene			4	20	500					0.66									
Phenanthrene			10	500	500					9.8									
Pyrene			1000	1000	1000					9.6									
Extractable Petroleum Hydrocarbons (EPH)	EPH-04-1.1	mg/kg					NT	NT	NT	NT	NT	NT	NT	NT	NT		NT		
C9-C18 Aliphatics			1000	1000	1000									< 7.74		< 7.38		< 8.14 G	< 7.81 G
C11-C22 Aromatics, Adjusted			1000	1000	1000									40.8		< 7.38		< 8.14	< 7.81
C19-C36 Aliphatics			3000	3000	3000									20.2		< 7.38		< 8.14 G	< 7.81 G
Anthracene			1000	1000	1000									0.465		< 0.369		< 0.407	< 0.39
Benzo(a)anthracene			7	7	7					1.37				1.41		< 0.369		< 0.407	< 0.39
Benzo(a)pyrene			2	2	2					1.11				1.11		< 0.369		< 0.407	< 0.39
Benzo(b)fluoranthene			7	7	7					0.902				1.27		< 0.369		< 0.407	< 0.39
Benzo(g,h,i)perylene			1000	1000	1000					1.64				1.27		< 0.369		< 0.407	< 0.39
Benzo(k)fluoranthene			70	70	70					3.33				1.64		< 0.369		< 0.407	< 0.39
Chrysene			70	70	70					1.04				2.01		< 0.369		< 0.407	< 0.39
Fluoranthene			1000	1000	1000					2.79				2.79		< 0.369		< 0.407	< 0.39
Indeno(1,2,3-cd)Pyrene			7	7	7					ND				2.79		< 0.369		< 0.407	< 0.39
Phenanthrene			10	500	500														
Pyrene			1000	1000	1000														
Chlorinated Herbicides	8151A	mg/kg	NS	NS	NS		NT	NT	NT	NT	ND	NT	NT	NT	NT		NT	NT	NT
Organochlorine Pesticides	8081B	mg/kg																	
Endosulfan II			0.5	300	1					0.0257 G									
Total Petroleum Hydrocarbons (TPH)		mg/kg					NT	NT	NT	NT	330	NT	NT	NT	NT	NT	NT	NT	NT
TPH			1000	1000	1000														
Polychlorinated Biphenyls (PCBs)	8082A	mg/kg							NT					NT		NT		NT	NT
Aroclor 1254			1	1	1		< 0.0374	< 0.0355	< 0.039		0.0759	< 0.038	< 0.0377		< 0.0383		< 0.038		NT
PCBs, Total			1	1	1		< 0.0374	< 0.0355	< 0.039		0.0759	< 0.038	< 0.0377		< 0.0383		< 0.038		NT
Total Metals		mg/kg														NT	NT	NT	NT
Antimony, Total	6010C		20	20	20		< 2.3	NT	NT	< 2.3	NT	NT	< 2.2	NT	NT		NT	NT	NT
Arsenic, Total	6010C		20	20	20		5.1	5.2	7.1	12	4.3	8.2	5						
Barium, Total	6010C		1000	1000	1000		54	34	47	79	24	98	42						
Beryllium, Total	6010C		90	90	90		0.36	NT	NT	0.33	NT	0.36	NT						
Cadmium, Total	6010C		70	70	70		< 0.46	< 0.43	< 0.47	< 0.45	< 0.45	< 0.45	< 0.46						
Chromium, Total	6010C		100	100	100		11	13	15	12	6.8	17	12						
Lead, Total	6010C		200	200	200		130	38	97	270	52	290	80						
Mercury, Total	7471B		20	20	20		0.417	0.326	0.42	0.532	0.262	1.25	0.46						
Nickel, Total	6010C		600	600	600		8.3	NT	NT	24	NT	11	NT						
Selenium, Total	6010C		400	400	400		< 2.3	< 2.2	< 2.3	< 2.3	< 2.2	< 2.2	< 2.3						
Silver, Total	6010C		100	100	100		< 0.46	< 0.43	< 0.47	< 0.45	< 0.45	< 0.45	< 0.46						
Thallium, Total	6010C		8	8	8		< 2.3	NT	NT	< 2.3	NT	< 2.2	NT						
Vanadium, Total	6010C		400	400	400		21	NT	NT	23	NT	21	NT						
Zinc, Total	6010C		1000	1000	1000		100	NT	NT	190	NT	110	NT						
TCLP Metals by EPA 1311		mg/L														NT	NT	NT	NT
Lead, Total	6010C		5	NS	NS		< 0.5			< 0.5			< 0.5			NT	NT	NT	NT
General Chemistry																			
Solids, Total	2540G	%	NS	NS	NS		84.4	91.7	84.7	80	85.3	87.3	86.7	81.8	85.5	89.4	86.2	78.8	80.9
Specific Conductance (25° C)	9050A	umhos/cm	NS	NS	NS		NT	NT	NT	NT	110	NT	NT	NT	NT	NT	NT	NT	NT
pH (H)	9045D	SU	NS	NS	NS		NT	NT	NT	NT	8.1	NT	NT	NT	NT	NT	NT	NT	NT
Cyanide, Reactive	1.7.3	mg/kg	NS	NS	NS		NT	NT	NT	NT	< 10	NT	NT	NT	NT	NT	NT	NT	NT
Sulfide, Reactive	1.7.3	mg/kg	NS	NS	NS		NT	NT	NT	NT	< 10	NT	NT	NT	NT	NT	NT	NT	NT
Oxidation/Reduction Potential	1498	mv	NS	NS	NS		NT	NT	NT	NT	190	NT	NT	NT	NT	NT	NT	NT	NT
Paint Filter Liquid	9095B	NA	NS	NS	NS		NT	NT	NT	NT	Negative	NT	NT	NT	NT	NT	NT	NT	NT
Ignitability	1030	NA	NS	NS	NS		NT	NT	NT	NT	NI	NT	NT	NT	NT	NT	NT	NT	NT

- General Notes:**
- In general, only analytes detected in at least one sample are

Table 3. Chemical Testing Results - Soil (GEI)
 Release Abatement Measure Plan
 Parcel P-3, Tremont Street & Whittier Streets
 Boston, Massachusetts

Analyte	Method	Units	MCP RCS-1	Method 1 S-1/GW-2	Method 1 S-1/GW-3	Sample ID:	B305-S7(9-13")	B306-S7(8-14")	B307-S7(6-18")	B308-S2(0-18")	B308-S7(0-10")	B308-COMP(0-8")	B308-COMP(8-22")
						Sample Date:	3/2/2017	3/3/2017	2/27/2017	3/1/2017	3/1/2017	3/1/2017	3/1/2017
						Sample Depth (ft):	13	12-14	12.5	3	12	0-8	8-22
						Sampled By:	GEI	GEI	GEI	GEI	GEI	GEI	GEI
Volatile Organic Compounds (VOCs)													
Benzene	8260C	mg/kg	2	40	40		< 0.037	<0.049	< 0.053	0.049	< 0.04	NT	NT
Trichloroethene			0.3	0.3	30		< 0.037	0.063	< 0.053	< 0.048	0.25		
Volatile Petroleum Hydrocarbons (VPH)													
C9-C10 Aromatics	VPH-04-1.1	mg/kg	100	100	100		< 2.06	<2.40	< 2.82		NT	NT	NT
C5-C8 Aliphatics, Adjusted			100	100	100		< 2.06	<2.40	< 2.82				
C9-C12 Aliphatics, Adjusted			1000	1000	1000		< 2.06	<2.40	< 2.82				
Semivolatile Organic Compounds (SVOCs)													
Acenaphthene	8270D	mg/kg	4	1000	1000		NT	NT	NT	NT	NT	3.9	< 0.15
Acenaphthylene			1	600	10							0.23	< 0.15
Anthracene			1000	1000	1000							11	< 0.11
Benzo(a)anthracene			7	7	7							16	0.2
Benzo(a)pyrene			2	2	2							15	0.17
Benzo(b)fluoranthene			7	7	7							19	0.2
Benzo(g,h,i)perylene			1000	1000	1000							7.6	< 0.15
Benzo(k)fluoranthene			70	70	70							4.1	< 0.11
Chrysene			70	70	70							15	0.18
Dibenzo(a,h)anthracene			0.7	0.7	0.7							2.0	< 0.11
Dibenzofuran			100	NS	NS							2.6	< 0.18
Di-n-butylphthalate			50	NS	NS							0.36	0.21
Fluoranthene			1000	1000	1000							40	0.41
Fluorene			1000	1000	1000							5.6	< 0.18
Indeno(1,2,3-cd)pyrene			7	7	7							8.8	< 0.15
2-Methylnaphthalene			0.7	80	300							0.74	< 0.22
Naphthalene			4	20	500							0.55	< 0.18
Phenanthrene			10	500	500							37	0.34
Pyrene			1000	1000	1000							32	0.36
Extractable Petroleum Hydrocarbons (EPH)													
C9-C18 Aliphatics	EPH-04-1.1	mg/kg	1000	1000	1000		< 6.9	<7.28	< 8.21 G	NT	NT	NT	NT
C11-C22 Aromatics, Adjusted			1000	1000	1000		< 6.9	<7.28	< 8.21				
C19-C36 Aliphatics			3000	3000	3000		< 6.9	<7.28	< 8.21 G				
Anthracene			1000	1000	1000		< 0.345	<0.364	< 0.41				
Benzo(a)anthracene			7	7	7		< 0.345	<0.364	< 0.41				
Benzo(a)pyrene			2	2	2		< 0.345	<0.364	< 0.41				
Benzo(b)fluoranthene			7	7	7		< 0.345	<0.364	< 0.41				
Benzo(g,h,i)perylene			1000	1000	1000		< 0.345	<0.364	< 0.41				
Benzo(k)fluoranthene			70	70	70		< 0.345	<0.364	< 0.41				
Chrysene			70	70	70		< 0.345	<0.364	< 0.41				
Fluoranthene			1000	1000	1000		< 0.345	<0.364	< 0.41				
Indeno(1,2,3-cd)Pyrene			7	7	7		< 0.345	<0.364	< 0.41				
Phenanthrene			10	500	500		< 0.345	<0.364	< 0.41				
Pyrene			1000	1000	1000		< 0.345	<0.364	< 0.41				
Chlorinated Herbicides													
Organochlorine Pesticides	8151A	mg/kg	NS	NS	NS		NT	NT	NT	NT	NT	ND	ND
Endosulfan II	8081B	mg/kg	0.5	300	1		NT	NT				< 0.00921	< 0.00854
Total Petroleum Hydrocarbons (TPH)													
TPH		mg/kg	1000	1000	1000		NT	NT	NT	NT	NT	313	< 36.6
Polychlorinated Biphenyls (PCBs)													
Aroclor 1254	8082A	mg/kg	1	1	1		NT	NT	NT	NT	NT	< 0.0384	< 0.0355
PCBs, Total			1	1	1		NT	NT	NT	NT	NT	< 0.0384	< 0.0355
Total Metals													
Antimony, Total	6010C	mg/kg	20	20	20							< 2.3	< 2.2
Arsenic, Total	6010C		20	20	20							3.3	3
Barium, Total	6010C		1000	1000	1000							48	25
Beryllium, Total	6010C		90	90	90							< 0.23	< 0.22
Cadmium, Total	6010C		70	70	70							< 0.45	< 0.44
Chromium, Total	6010C		100	100	100							9.1	16
Lead, Total	6010C		200	200	200							56	12
Mercury, Total	7471B		20	20	20							0.207	< 0.072
Nickel, Total	6010C		600	600	600							6.3	10
Selenium, Total	6010C		400	400	400							< 2.3	< 2.2
Silver, Total	6010C		100	100	100							< 0.45	< 0.44
Thallium, Total	6010C		8	8	8							< 2.3	< 2.2
Vanadium, Total	6010C		400	400	400							11	19
Zinc, Total	6010C		1000	1000	1000							50	38
TCLP Metals by EPA 1311													
Lead, Total	6010C	mg/L	5	NS	NS		NT	NT	NT	NT	NT	NT	NT
General Chemistry													
Solids, Total	2540G	%	NS	NS	NS		92.3	87.2	80.7	91.7	93.3	85.9	89.7
Specific Conductance (25° C)	9050A	umhos/cm	NS	NS	NS		NT	NT	NT	NT	NT	300	91
pH (H)	9045D	SU	NS	NS	NS		NT	NT	NT	NT	NT	8.2	8.4
Cyanide, Reactive	1.7.3	mg/kg	NS	NS	NS		NT	NT	NT	NT	NT	< 10	< 10
Sulfide, Reactive	1.7.3	mg/kg	NS	NS	NS		NT	NT	NT	NT	NT	< 10	< 10
Oxidation/Reduction Potential	1498	mv	NS	NS	NS		NT	NT	NT	NT	NT	140	130
Paint Filter Liquid	9095B	NA	NS	NS	NS		NT	NT	NT	NT	NT	Negative	Negative
Ignitability	1030	NA	NS	NS	NS		NT	NT	NT	NT	NT	NI	NI

- General Notes:**
- In general, only analytes detected in at least one sample are reported here. For a complete list of analytes see the laboratory data sheets.
 - < = less than reported detection limits
 - MCP = 310 CMR 40.0000 Massachusetts Contingency Plan with revisions effective June 20, 2014.
 - Method 1 Standards (e.g., S-1/GW-2) and UCLs, where identified, are cited from the MCP.
 - ND = None detected above laboratory detection limit.
 - mg/kg = milligrams per kilogram.
 - Values in bold exceed Method 1 standards.
 - NI = Not Ignitable.
 - TCLP = Total Characteristic Leaching Procedure.

Qualifiers:

G The result is estimated due to duplicate precision outside control limits.

**Table 4. Soil Management Categories
Release Abatement Measure Plan
Parcel P-3, Tremont Street & Whittier Streets
Boston, Massachusetts**

Construction/Demolition Debris Disposal:

Construction/Demolition Debris is excavated or otherwise generated material that is suitable for disposal at a state-regulated facility. Construction/Demolition Debris may include asphalt, brick, concrete, rock, steel, unpreserved wood, etc.

Category A: Restricted Reuse (<RCS-1 Material):

Category A materials are excavated materials with concentrations of oil or hazardous materials (OHM) below the reportable concentrations for soil category S-1 (RCS-1) as identified in the Massachusetts Contingency Plan (MCP; 310 CMR 40.0000), and not containing visual evidence of contamination such as coal or wood ash. Category A materials may be reused on site or off site at a location subject to the soil reuse provisions identified in 310 CMR 40.0032(3) and MassDEP Similar Soils Provision Guidance WSC#13-500.

Category B: Reuse as Unlined Landfill Cover in Massachusetts:

Category B materials are excavated materials with concentrations of OHM and physical characteristics that meet the acceptance criteria for use as daily cover material at an unlined landfill in Massachusetts.

Category C: Reuse as Lined Landfill Cover in Massachusetts:

Category C materials are excavated materials with concentrations of OHM and physical characteristics that meet the acceptance criteria for use as daily cover material at a lined landfill in Massachusetts.

Category D: Recycling at an Asphalt Batch Recycling Plant:

Category D materials are excavated materials with concentrations of OHM and physical characteristics that meet the acceptance criteria for recycling by asphalt batching.

Category E: Disposal in Out-of-State Landfill as Non-Hazardous Waste:

Category E materials are excavated materials with concentrations of OHM and physical characteristics that do not meet the acceptance criteria for Massachusetts landfill cover. This category includes material that has been treated to reduce toxicity characteristic leachate procedure (TCLP) concentrations to below regulatory limits.

Category F-1: On-site Treatment of Hazardous Waste and Disposal in Out-of-State Landfill as Non-Hazardous Waste:

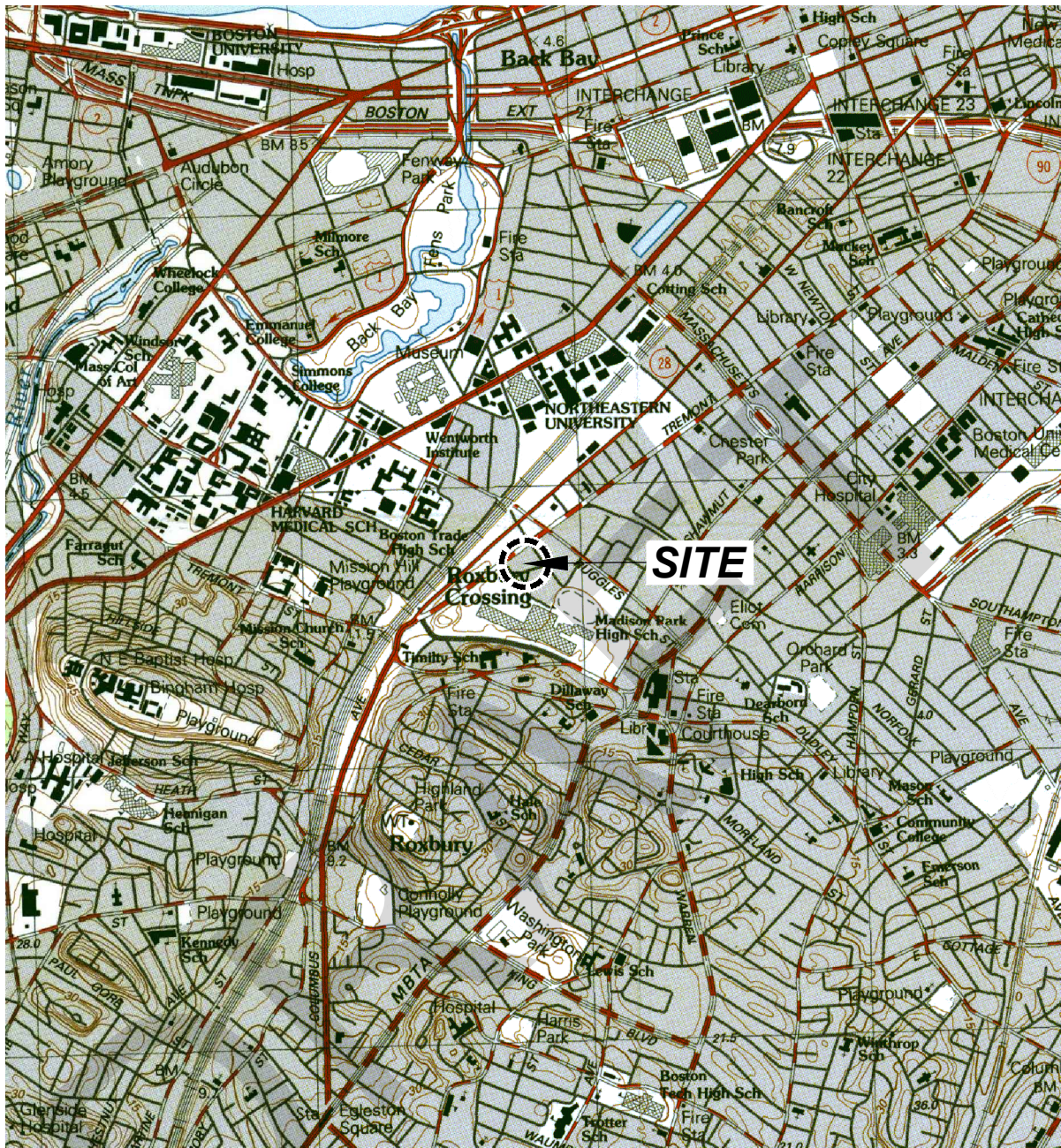
Category F-1 materials are excavated materials that are considered a listed or characteristic hazardous waste and that can feasibly be treated on site prior to disposal. This category includes material with TCLP concentrations greater than those acceptable for disposal as non-hazardous waste. The material will be re-classified and disposed of as Category E.

Category F-2: Disposal in Out-of-State Landfill as Hazardous Waste:

Category F-2 materials are excavated materials that are considered a listed or characteristic hazardous waste and that cannot feasibly be treated on site prior to disposal.

Figures

DRAFT



This Image provided by MassGIS is from U.S.G.S. Topographic 7.5 X 15 Minute Series Boston South, MA Quadrangle, 1987. Datum is National Geodetic Vertical Datum of 1929 (NGVD29). Contour Interval is 3 Meters.



Release Abatement Measure Plan
Parcel P-3, Tremont & Whittier Streets
Boston (Roxbury), Massachusetts

Boston Planning & Redevelopment Agency
Boston, Massachusetts

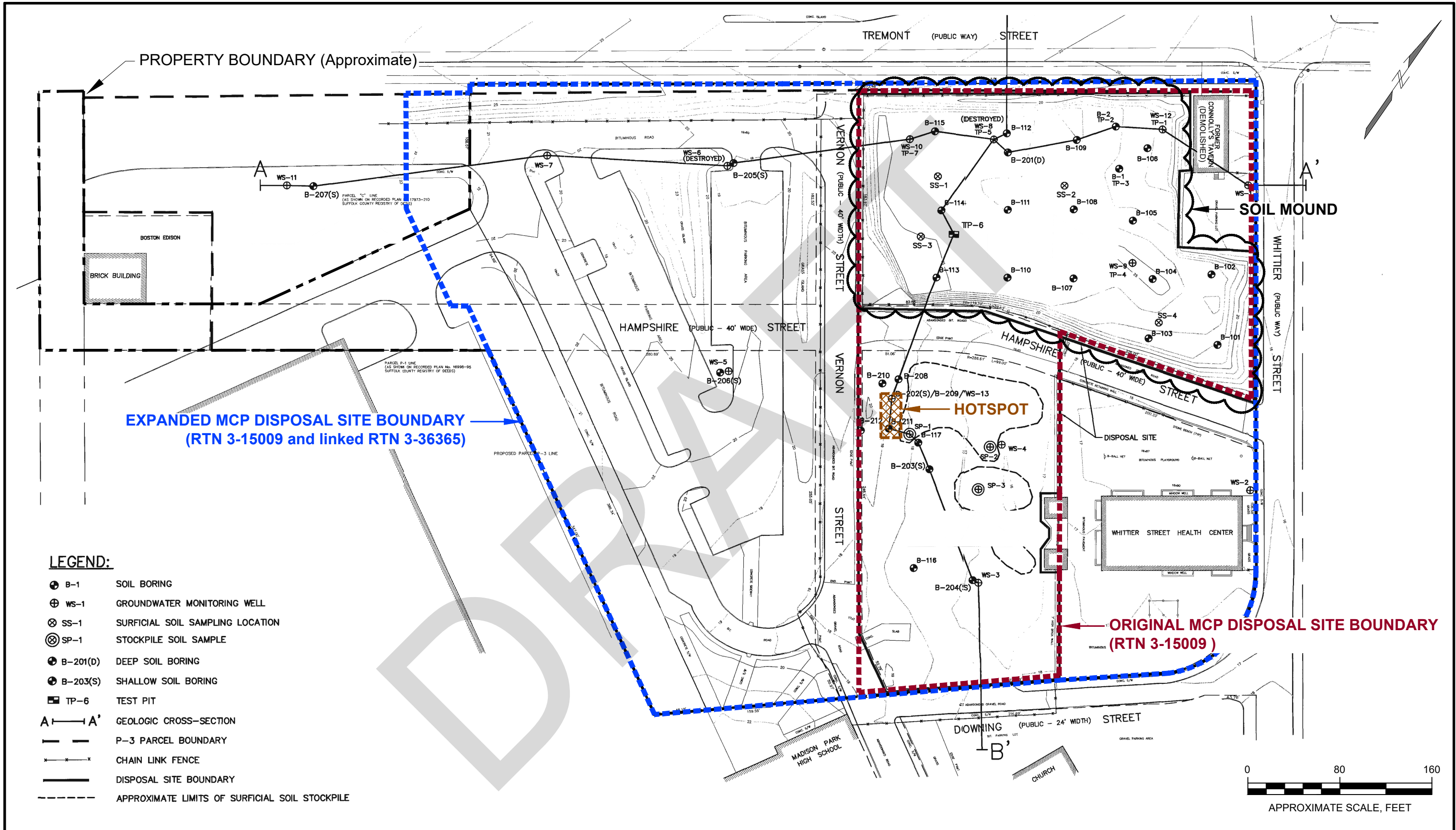


Project 2002082

SITE LOCATION MAP

January 2021

Fig. 1



LEGEND:

- ⊕ B-1 SOIL BORING
- ⊕ WS-1 GROUNDWATER MONITORING WELL
- ⊗ SS-1 SURFICIAL SOIL SAMPLING LOCATION
- ⊗ SP-1 STOCKPILE SOIL SAMPLE
- ⊕ B-201(D) DEEP SOIL BORING
- ⊕ B-203(S) SHALLOW SOIL BORING
- ⊠ TP-6 TEST PIT
- A—A' GEOLOGIC CROSS-SECTION
- P-3 PARCEL BOUNDARY
- CHAIN LINK FENCE
- DISPOSAL SITE BOUNDARY
- - - APPROXIMATE LIMITS OF SURFICIAL SOIL STOCKPILE

NOTE:

1. BASE PLAN FROM FIGURE TITLED "FIG. 2 ROXBURY, MASSACHUSETTS, BRA PARCEL P-3, SITE PLAN," PREPARED BY WESTON & SAMPSON ENGINEERS, INC. AND DATED MARCH 2002.

Release Abatement Measure Plan Parcel P-3, Tremont & Whittier Streets Boston (Roxbury), Massachusetts	 GEI Consultants	MCP SITE INVESTIGATION PLAN
Boston Planning & Redevelopment Agency Boston, Massachusetts		Project 2002082 January 2021 Fig. 2

MassDEP - Bureau of Waste Site Cleanup

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

Site Information:

PARCEL P-3
TREMONT AND WHITTIER STREETS BOSTON, MA
3-000015009

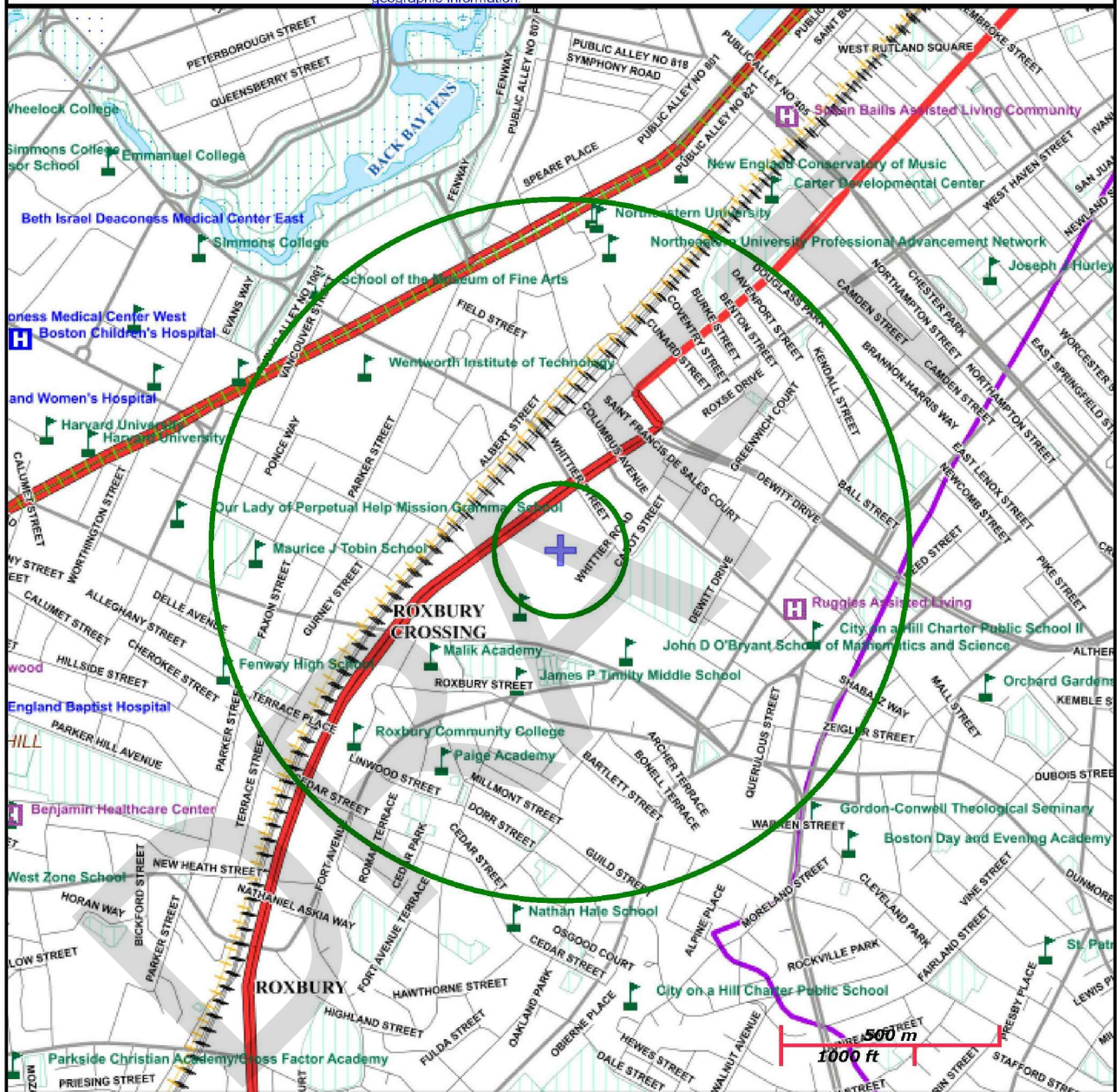
NAD83 UTM Meters:
4688877mN, 327828mE (Zone: 19)
July 20, 2020

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

Release Abatement Measure Plan
Parcel P-3, Tremont & Whittier Streets
Boston (Roxbury), Massachusetts

Boston Planning & Redevelopment Agency
Boston, Massachusetts



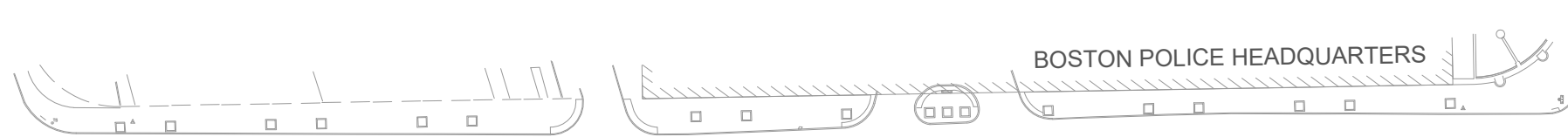
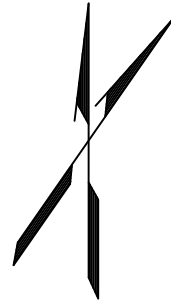
MASSGIS SITE SCORING MAP

Project 2002082

January 2021

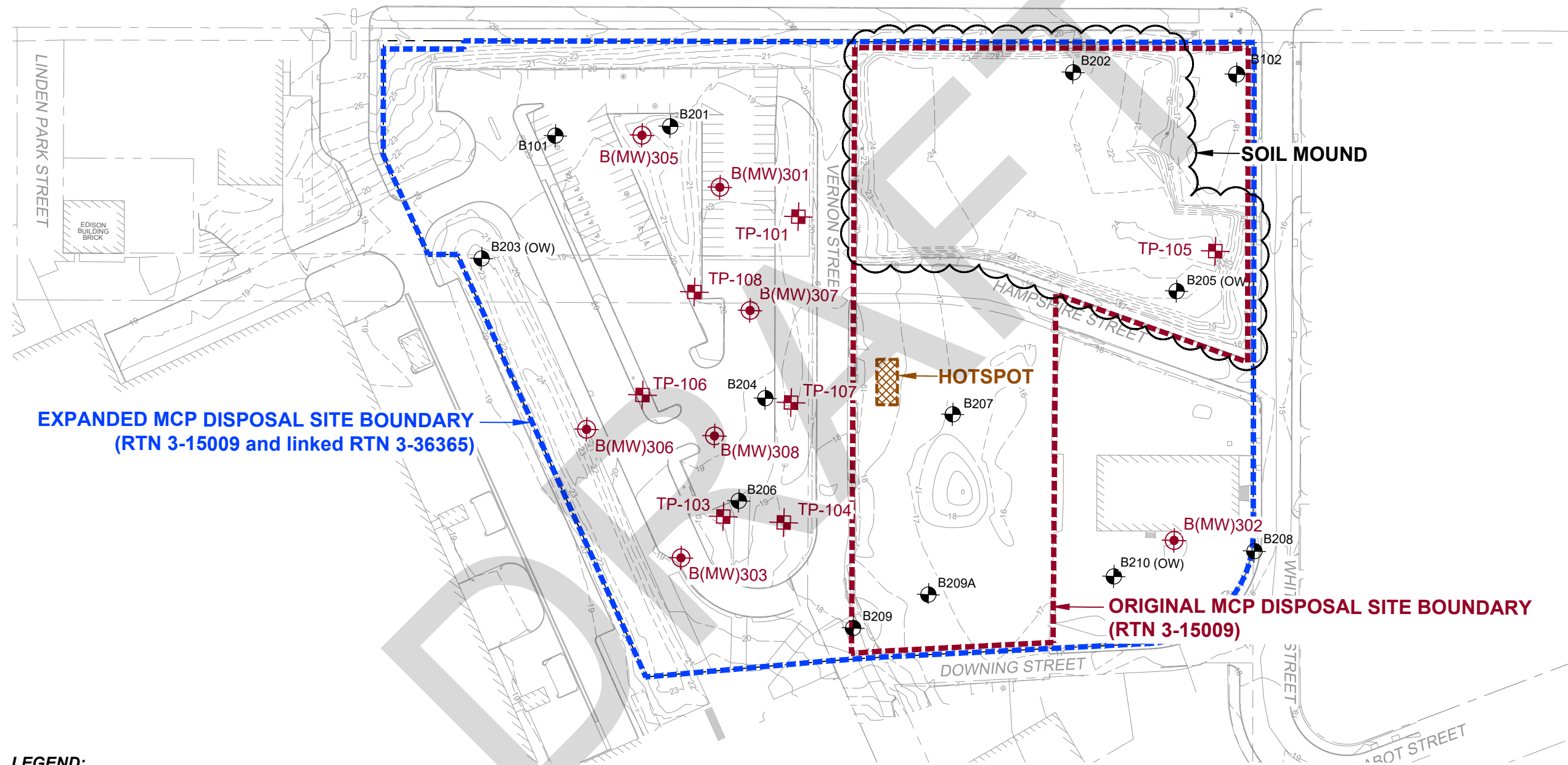
Fig. 3

CALLED NORTH
TRUE NORTH



BOSTON POLICE HEADQUARTERS





TREMONT STREET



EXPANDED MCP DISPOSAL SITE BOUNDARY
(RTN 3-15009 and linked RTN 3-36365)

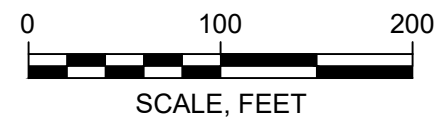
ORIGINAL MCP DISPOSAL SITE BOUNDARY
(RTN 3-15009)


LEGEND:

-  MONITORING WELL, GEI MARCH 2017
-  TEST PIT, GEI MARCH 2017
-  B201 BORING, GEI JULY 2016
-  B101 BORING, GEI 2013

NOTES:

1. PRELIMINARY BASE PLAN PREPARED BY BSC GROUP AND TRANSMITTED TO GEI ON JULY 12, 2013.
2. ELEVATIONS REFERENCE BOSTON CITY BASE DATUM WHICH IS 5.65 FT BELOW NGVD 1929. EL. 0.0 BCB = EL. -5.65 NGVD 1929.



<p>Release Abatement Measure Plan Parcel P-3, Tremont & Whittier Streets Boston (Roxbury), Massachusetts</p>		<p>TEST PIT AND MONITORING WELL LOCATION PLAN</p>
<p>Boston Planning & Redevelopment Agency Boston, Massachusetts</p>	<p>Project 2002082</p>	<p>January 2021 Fig. 4</p>

Appendix A

MassDEP Transmittal Forms (BWSC106)

DRAFT



**RELEASE ABATEMENT MEASURE (RAM)
TRANSMITTAL FORM**

Release Tracking Number

3 - 15009

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

A. SITE LOCATION:

1. Site Name/Location Aid: UTMS 4688700MN 327800 ME

2. Street Address: PARCEL P-3 TREMONT & WHITTIER STS

3. City/Town: ROXBURY 4. Zip Code: 021190000

5. Check here if the disposal site that is the source of the release is Tier Classified. Check the current Tier Classification Category.

a. Tier I

b. Tier ID

c. Tier II

B. THIS FORM IS BEING USED TO: (check all that apply)

1. List Submittal Date of Initial RAM Plan (if previously submitted): _____
(mm/dd/yyyy)

2. Submit an **Initial Release Abatement Measure (RAM) Plan.**

a. Check here if the RAM is being conducted as part of the construction of a permanent structure. If checked, you must specify what type of permanent structure is to be erected in or in the immediate vicinity of the area where the RAM is to be conducted.

b. Specify type of permanent structure: (check all that apply) i. School ii. Residential iii. Commercial

iv. Industrial v. Other Specify: _____

3. Submit a **Modified RAM Plan** of a previously submitted RAM Plan.

4. Submit a **RAM Status Report.**

5. Submit a **Remedial Monitoring Report.** (This report can only be submitted through eDEP, concurrent with a RAM Status Report.)

a. Type of Report: (check one) i. Initial Report ii. Interim Report iii. Final Report

b. Frequency of Submittal:

i. A Remedial Monitoring Report(s) submitted every six months, concurrent with a RAM Status Report.

ii. A Remedial Monitoring Report(s) submitted annually, concurrent with a RAM Status Report.

c. Number of Remedial Systems and/or Monitoring Programs: _____

A separate BWSC106A, RAM Remedial Monitoring Report, must be filled out for each Remedial System and/or Monitoring Program addressed by this transmittal form.

6. Submit a **RAM Completion Statement.**

7. Submit a **Revised RAM Completion Statement.**

8. Provide Additional RTNs:

a. Check here if this RAM Submittal covers additional Release Tracking Numbers (RTNs). RTNs that have been previously linked to a Primary Tier Classified RTN do not need to be listed here. This section is intended to allow a RAM to cover more than one unclassified RTN and not show permanent linkage to a Primary Tier Classified RTN.

b. Provide the additional Release Tracking Number(s) covered by this RAM Submittal. - -

9. Include in the **RAM Plan** or **Modified RAM Plan** a **Plan for the Application of Remedial Additives** near a sensitive receptor, pursuant to 310 CMR 40.0046(3).

(All sections of this transmittal form must be filled out unless otherwise noted above)



**RELEASE ABATEMENT MEASURE (RAM)
TRANSMITTAL FORM**

Release Tracking Number

3 - 15009

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

C. RELEASE OR THREAT OF RELEASE CONDITIONS THAT WARRANT RAM:

1. Media Impacted and Receptors Affected: (check all that apply)
- | | | |
|---|---|---|
| <input type="checkbox"/> a. Paved Surface | <input type="checkbox"/> b. Basement | <input type="checkbox"/> c. School |
| <input type="checkbox"/> d. Public Water Supply | <input type="checkbox"/> e. Surface Water | <input type="checkbox"/> f. Zone 2 |
| <input type="checkbox"/> g. Private Well | <input type="checkbox"/> h. Residence | <input checked="" type="checkbox"/> i. Soil |
| <input type="checkbox"/> j. Ground Water | <input type="checkbox"/> k. Sediments | <input type="checkbox"/> l. Wetland |
| <input type="checkbox"/> m. Storm Drain | <input type="checkbox"/> n. Indoor Air | <input type="checkbox"/> o. Air |
| <input type="checkbox"/> p. Soil Gas | <input type="checkbox"/> q. Sub-Slab Soil Gas | <input type="checkbox"/> r. Critical Exposure Pathway |
| <input type="checkbox"/> s. NAPL | <input type="checkbox"/> t. Unknown | |
| <input type="checkbox"/> u. Others | Specify: _____ | |

2. Sources of the Release or TOR: (check all that apply)
- | | | |
|--|---|-----------------------------------|
| <input type="checkbox"/> a. Transformer | <input type="checkbox"/> b. Fuel Tank | <input type="checkbox"/> c. Pipe |
| <input type="checkbox"/> d. OHM Delivery | <input type="checkbox"/> e. AST | <input type="checkbox"/> f. Drums |
| <input type="checkbox"/> g. Tanker Truck | <input type="checkbox"/> h. Hose | <input type="checkbox"/> i. Line |
| <input type="checkbox"/> j. UST | Describe: _____ | |
| <input type="checkbox"/> k. Vehicle | <input type="checkbox"/> l. Boat/Vessel | |
| <input checked="" type="checkbox"/> m. Unknown | <input checked="" type="checkbox"/> n. Other: | URBAN FILL |

3. Type of Release or TOR: (check all that apply)
- | | | | |
|--|---|---|--------------------------------------|
| <input checked="" type="checkbox"/> a. Dumping | <input type="checkbox"/> b. Fire | <input type="checkbox"/> c. AST Removal | <input type="checkbox"/> d. Overfill |
| <input type="checkbox"/> e. Rupture | <input type="checkbox"/> f. Vehicle Accident | <input type="checkbox"/> g. Leak | <input type="checkbox"/> h. Spill |
| <input type="checkbox"/> i. Test Failure | <input type="checkbox"/> j. TOR Only | | |
| <input type="checkbox"/> k. UST Removal | Describe: _____ | | |
| <input type="checkbox"/> l. Unknown | <input checked="" type="checkbox"/> m. Other: | URBAN FILL | |

4. Identify Oils and Hazardous Materials Released: (check all that apply)
- | | |
|---|---|
| <input checked="" type="checkbox"/> a. Oils | <input checked="" type="checkbox"/> b. Chlorinated Solvents |
| <input checked="" type="checkbox"/> c. Heavy Metals | <input type="checkbox"/> d. Others |
| Specify: _____ | |

D. DESCRIPTION OF RESPONSE ACTIONS: (check all that apply, for volumes list cumulative amounts)

- | | |
|---|---|
| <input type="checkbox"/> 1. Assessment and/or Monitoring Only | <input type="checkbox"/> 2. Temporary Covers or Caps |
| <input type="checkbox"/> 3. Deployment of Absorbent or Containment Materials | <input type="checkbox"/> 4. Temporary Water Supplies |
| <input type="checkbox"/> 5. Structure Venting System/HVAC Modification System | <input type="checkbox"/> 6. Temporary Evacuation or Relocation of Residents |
| <input type="checkbox"/> 7. Product or NAPL Recovery | <input type="checkbox"/> 8. Fencing and Sign Posting |
| <input type="checkbox"/> 9. Groundwater Treatment Systems | <input type="checkbox"/> 10. Soil Vapor Extraction |
| <input type="checkbox"/> 11. Remedial Additives | <input type="checkbox"/> 12. Air Sparging |
| <input type="checkbox"/> 13. Active Exposure Pathway Mitigation System | <input type="checkbox"/> 14. Passive Exposure Pathway Mitigation System |
| <input type="checkbox"/> 15. Monitored Natural Attenuation | <input type="checkbox"/> 16. In-Situ Chemical Oxidation |



RELEASE ABATEMENT MEASURE (RAM)
TRANSMITTAL FORM

Release Tracking Number

3 - 15009

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

D. DESCRIPTION OF RESPONSE ACTIONS (cont.): (check all that apply, for volumes list cumulative amounts)

17. Excavation of Contaminated Soils

a. Re-use, Recycling or Treatment

i. On Site

Estimated volume in cubic yards

ii. Off Site

Estimated volume in cubic yards

1000

ii. Receiving Facility: TBD

Town: TBD

State: MA

ii. Receiving Facility:

Town:

State:

iii. Describe: TBD

b. Store

i. On Site

Estimated volume in cubic yards

ii. Off Site

Estimated volume in cubic yards

ii. Receiving Facility:

Town:

State:

ii. Receiving Facility:

Town:

State:

c. Landfill

i. Cover

Estimated volume in cubic yards

Receiving Facility:

Town:

State:

ii. Disposal

Estimated volume in cubic yards

Receiving Facility:

Town:

State:

18. Removal of Drums, Tanks or Containers:

a. Describe Quantity and Amount:

b. Receiving Facility:

Town:

State:

c. Receiving Facility:

Town:

State:

19. Removal of Other Contaminated Media:

a. Specify Type and Volume:

b. Receiving Facility:

Town:

State:

c. Receiving Facility:

Town:

State:

20. Other Response Actions:

Describe:

21. Use of Innovative Technologies:

Describe:



**RELEASE ABATEMENT MEASURE (RAM)
TRANSMITTAL FORM**

Release Tracking Number

3 - 15009

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

E. LSP SIGNATURE AND STAMP :

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

> if Section B of this form indicates that a **Release Abatement Measure Plan** is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that a **Release Abatement Measure Status Report** and/or **Remedial Monitoring Report** is being submitted, the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply (ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that a **Release Abatement Measure Completion Statement** is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal:

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

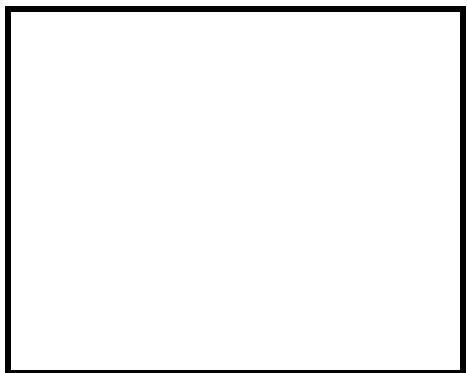
1. LSP #: 9719

2. First Name: ILEENS 3. Last Name: GLADSTONE

4. Telephone: 7817214012 5. Ext.: _____ 6. Email: igladstone@geiconsultan

7. Signature: _____

8. Date: _____ 9. LSP Stamp: _____
(mm/dd/yyyy)





RELEASE ABATEMENT MEASURE (RAM)
TRANSMITTAL FORM

Release Tracking Number

3 - 15009

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

F. PERSON UNDERTAKING RAM:

1. Check all that apply: a. change in contact name b. change of address c. change in the person undertaking response actions

2. Name of Organization: BOSTON PLANNING & DEVELOPMENT AGENCY
3. Contact First Name: WILLIAM 4. Last Name: EPPERSON
5. Street: 22 DRYDOCK AVENUE 6. Title: DEPUTY DIR. CAPITAL CONSTRUCTION
7. City/Town: BOSTON 8. State: MA 9. ZIP Code: 022100000
10. Telephone: 6179186202 11. Ext.: 12. Email: william.j.epperson@bost

G. RELATIONSHIP TO RELEASE OR THREAT OF RELEASE OF PERSON UNDERTAKING RAM:

Check here to change relationship

1. RP or PRP a. Owner b. Operator c. Generator d. Transporter
 e. Other RP or PRP Specify: _____

2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

4. Any Other Person Undertaking RAM Specify Relationship: _____

H. REQUIRED ATTACHMENT AND SUBMITTALS:

1. Check here if any Remediation Waste, generated as a result of this RAM, will be stored, treated, managed, recycled or reused at the site following submission of the RAM Completion Statement. You must submit a Phase IV Remedy Implementation Plan along with the appropriate transmittal form (BWSC108).

2. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.

3. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the implementation of a Release Abatement Measure.

4. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to bwsc.edep@state.ma.us.

5. If a RAM Compliance Fee is required for this RAM, check here to certify that a RAM Compliance Fee was submitted to DEP, P. O. Box 4062, Boston, MA 02211.

6. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.



**RELEASE ABATEMENT MEASURE (RAM)
TRANSMITTAL FORM**

Release Tracking Number

3 - 15009

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

I. CERTIFICATION OF PERSON UNDERTAKING RAM:

1. I, _____, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: _____ 3. Title: DEPUTY DIR. CAPITAL CONSTRUCTIO
(Signature)

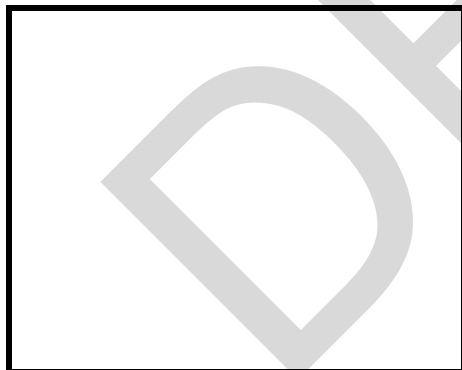
4. For: BOSTON PLANNING & DEVELOPMENT AGENCY 5. Date: _____
(Name of person or entity recorded in Section F) (mm/dd/yyyy)

6. Check here if the address of the person providing certification is different from address recorded in Section F.

7. Street: _____
8. City/Town: _____ 9. State: _____ 10. ZIP Code: _____
11. Telephone: _____ 12. Ext.: _____ 13. Email: _____

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO \$10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE

Date Stamp (DEP USE ONLY:)





**RELEASE ABATEMENT MEASURE (RAM)
TRANSMITTAL FORM**

Release Tracking Number

3 - 36365

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

A. SITE LOCATION:

1. Site Name/Location Aid: PARCEL P-3

2. Street Address: TREMONT STREET

3. City/Town: BOSTON 4. Zip Code: 021200000

5. Check here if the disposal site that is the source of the release is Tier Classified. Check the current Tier Classification Category.

a. Tier I

b. Tier ID

c. Tier II

B. THIS FORM IS BEING USED TO: (check all that apply)

1. List Submittal Date of Initial RAM Plan (if previously submitted): _____
(mm/dd/yyyy)

2. Submit an **Initial Release Abatement Measure (RAM) Plan.**

a. Check here if the RAM is being conducted as part of the construction of a permanent structure. If checked, you must specify what type of permanent structure is to be erected in or in the immediate vicinity of the area where the RAM is to be conducted.

b. Specify type of permanent structure: (check all that apply) i. School ii. Residential iii. Commercial

iv. Industrial v. Other Specify: _____

3. Submit a **Modified RAM Plan** of a previously submitted RAM Plan.

4. Submit a **RAM Status Report.**

5. Submit a **Remedial Monitoring Report.** (This report can only be submitted through eDEP, concurrent with a RAM Status Report.)

a. Type of Report: (check one) i. Initial Report ii. Interim Report iii. Final Report

b. Frequency of Submittal:

i. A Remedial Monitoring Report(s) submitted every six months, concurrent with a RAM Status Report.

ii. A Remedial Monitoring Report(s) submitted annually, concurrent with a RAM Status Report.

c. Number of Remedial Systems and/or Monitoring Programs: _____

A separate BWSC106A, RAM Remedial Monitoring Report, must be filled out for each Remedial System and/or Monitoring Program addressed by this transmittal form.

6. Submit a **RAM Completion Statement.**

7. Submit a **Revised RAM Completion Statement.**

8. Provide Additional RTNs:

a. Check here if this RAM Submittal covers additional Release Tracking Numbers (RTNs). RTNs that have been previously linked to a Primary Tier Classified RTN do not need to be listed here. This section is intended to allow a RAM to cover more than one unclassified RTN and not show permanent linkage to a Primary Tier Classified RTN.

b. Provide the additional Release Tracking Number(s) - -

9. Include in the **RAM Plan** or **Modified RAM Plan** a **Plan for the Application of Remedial Additives** near a sensitive receptor, pursuant to 310 CMR 40.0046(3).

(All sections of this transmittal form must be filled out unless otherwise noted above)



RELEASE ABATEMENT MEASURE (RAM)
TRANSMITTAL FORM

Release Tracking Number

3 - 36365

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

C. RELEASE OR THREAT OF RELEASE CONDITIONS THAT WARRANT RAM:

1. Media Impacted and Receptors Affected: (check all that apply)
- | | | |
|---|---|---|
| <input type="checkbox"/> a. Paved Surface | <input type="checkbox"/> b. Basement | <input type="checkbox"/> c. School |
| <input type="checkbox"/> d. Public Water Supply | <input type="checkbox"/> e. Surface Water | <input type="checkbox"/> f. Zone 2 |
| <input type="checkbox"/> g. Private Well | <input type="checkbox"/> h. Residence | <input checked="" type="checkbox"/> i. Soil |
| <input type="checkbox"/> j. Ground Water | <input type="checkbox"/> k. Sediments | <input type="checkbox"/> l. Wetland |
| <input type="checkbox"/> m. Storm Drain | <input type="checkbox"/> n. Indoor Air | <input type="checkbox"/> o. Air |
| <input type="checkbox"/> p. Soil Gas | <input type="checkbox"/> q. Sub-Slab Soil Gas | <input type="checkbox"/> r. Critical Exposure Pathway |
| <input type="checkbox"/> s. NAPL | <input type="checkbox"/> t. Unknown | |
| <input type="checkbox"/> u. Others | Specify: _____ | |

2. Sources of the Release or TOR: (check all that apply)
- | | | |
|--|---|-----------------------------------|
| <input type="checkbox"/> a. Transformer | <input type="checkbox"/> b. Fuel Tank | <input type="checkbox"/> c. Pipe |
| <input type="checkbox"/> d. OHM Delivery | <input type="checkbox"/> e. AST | <input type="checkbox"/> f. Drums |
| <input type="checkbox"/> g. Tanker Truck | <input type="checkbox"/> h. Hose | <input type="checkbox"/> i. Line |
| <input type="checkbox"/> j. UST | Describe: _____ | |
| <input type="checkbox"/> k. Vehicle | <input type="checkbox"/> l. Boat/Vessel | |
| <input checked="" type="checkbox"/> m. Unknown | <input checked="" type="checkbox"/> n. Other: | URBAN FILL |

3. Type of Release or TOR: (check all that apply)
- | | | | |
|--|---|---|--------------------------------------|
| <input checked="" type="checkbox"/> a. Dumping | <input type="checkbox"/> b. Fire | <input type="checkbox"/> c. AST Removal | <input type="checkbox"/> d. Overfill |
| <input type="checkbox"/> e. Rupture | <input type="checkbox"/> f. Vehicle Accident | <input type="checkbox"/> g. Leak | <input type="checkbox"/> h. Spill |
| <input type="checkbox"/> i. Test Failure | <input type="checkbox"/> j. TOR Only | | |
| <input type="checkbox"/> k. UST Removal | Describe: _____ | | |
| <input type="checkbox"/> l. Unknown | <input checked="" type="checkbox"/> m. Other: | URBAN FILL | |

4. Identify Oils and Hazardous Materials Released: (check all that apply)
- | | |
|---|---|
| <input checked="" type="checkbox"/> a. Oils | <input checked="" type="checkbox"/> b. Chlorinated Solvents |
| <input checked="" type="checkbox"/> c. Heavy Metals | <input type="checkbox"/> d. Others |
| Specify: _____ | |

D. DESCRIPTION OF RESPONSE ACTIONS: (check all that apply, for volumes list cumulative amounts)

- | | |
|---|---|
| <input type="checkbox"/> 1. Assessment and/or Monitoring Only | <input type="checkbox"/> 2. Temporary Covers or Caps |
| <input type="checkbox"/> 3. Deployment of Absorbent or Containment Materials | <input type="checkbox"/> 4. Temporary Water Supplies |
| <input type="checkbox"/> 5. Structure Venting System/HVAC Modification System | <input type="checkbox"/> 6. Temporary Evacuation or Relocation of Residents |
| <input type="checkbox"/> 7. Product or NAPL Recovery | <input type="checkbox"/> 8. Fencing and Sign Posting |
| <input type="checkbox"/> 9. Groundwater Treatment Systems | <input type="checkbox"/> 10. Soil Vapor Extraction |
| <input type="checkbox"/> 11. Remedial Additives | <input type="checkbox"/> 12. Air Sparging |
| <input type="checkbox"/> 13. Active Exposure Pathway Mitigation System | <input type="checkbox"/> 14. Passive Exposure Pathway Mitigation System |
| <input type="checkbox"/> 15. Monitored Natural Attenuation | <input type="checkbox"/> 16. In-Situ Chemical Oxidation |



RELEASE ABATEMENT MEASURE (RAM)
TRANSMITTAL FORM

Release Tracking Number

3 - 36365

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

D. DESCRIPTION OF RESPONSE ACTIONS (cont.): (check all that apply, for volumes list cumulative amounts)

17. Excavation of Contaminated Soils

a. Re-use, Recycling or Treatment

i. On Site

Estimated volume in cubic yards

ii. Off Site

Estimated volume in cubic yards

1000

ii. Receiving Facility: TBD

Town: TBD

State: MA

ii. Receiving Facility: _____

Town: _____

State: _____

iii. Describe: TBD

b. Store

i. On Site

Estimated volume in cubic yards

ii. Off Site

Estimated volume in cubic yards

ii. Receiving Facility: _____

Town: _____

State: _____

ii. Receiving Facility: _____

Town: _____

State: _____

c. Landfill

i. Cover

Estimated volume in cubic yards

Receiving Facility: _____

Town: _____

State: _____

ii. Disposal

Estimated volume in cubic yards

Receiving Facility: _____

Town: _____

State: _____

18. Removal of Drums, Tanks or Containers:

a. Describe Quantity and Amount:

b. Receiving Facility: _____

Town: _____

State: _____

c. Receiving Facility: _____

Town: _____

State: _____

19. Removal of Other Contaminated Media:

a. Specify Type and Volume:

b. Receiving Facility: _____

Town: _____

State: _____

c. Receiving Facility: _____

Town: _____

State: _____

20. Other Response Actions:

Describe:

21. Use of Innovative Technologies:

Describe:



**RELEASE ABATEMENT MEASURE (RAM)
TRANSMITTAL FORM**

Release Tracking Number

3 - 36365

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

E. LSP SIGNATURE AND STAMP :

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

> if Section B of this form indicates that a **Release Abatement Measure Plan** is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that a **Release Abatement Measure Status Report** and/or **Remedial Monitoring Report** is being submitted, the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply (ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that a **Release Abatement Measure Completion Statement** is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal:

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

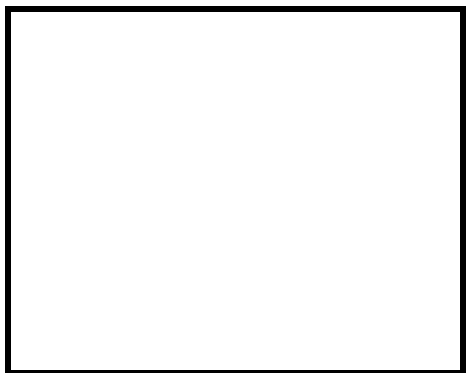
1. LSP #: 9719

2. First Name: ILEENS 3. Last Name: GLADSTONE

4. Telephone: 7817214012 5. Ext.: _____ 6. Email: igladstone@geiconsultan

7. Signature: _____

8. Date: _____ 9. LSP Stamp: _____
(mm/dd/yyyy)





**RELEASE ABATEMENT MEASURE (RAM)
TRANSMITTAL FORM**

Release Tracking Number

3 - 36365

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

F. PERSON UNDERTAKING RAM:

1. Check all that apply: a. change in contact name b. change of address c. change in the person undertaking response actions

2. Name of Organization: BOSTON PLANNING AND DEVELOPMENT AGENCY
3. Contact First Name: WILLIAM 4. Last Name: EPPERSON
5. Street: 22 DRYDOCK AVENUE STE 201 6. Title: DEPUTY DIR. CAPITAL CONSTRUCTION
7. City/Town: BOSTON 8. State: MA 9. ZIP Code: 022102386
10. Telephone: 6179186202 11. Ext.: _____ 12. Email: william.j.epperson@bost

G. RELATIONSHIP TO RELEASE OR THREAT OF RELEASE OF PERSON UNDERTAKING RAM:

Check here to change relationship

1. RP or PRP a. Owner b. Operator c. Generator d. Transporter
 e. Other RP or PRP Specify: _____

2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

4. Any Other Person Undertaking RAM Specify Relationship: _____

H. REQUIRED ATTACHMENT AND SUBMITTALS:

1. Check here if any Remediation Waste, generated as a result of this RAM, will be stored, treated, managed, recycled or reused at the site following submission of the RAM Completion Statement. You must submit a Phase IV Remedy Implementation Plan along with the appropriate transmittal form (BWSC108).

2. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.

3. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the implementation of a Release Abatement Measure.

4. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to bwsc.edep@state.ma.us.

5. If a RAM Compliance Fee is required for this RAM, check here to certify that a RAM Compliance Fee was submitted to DEP, P. O. Box 4062, Boston, MA 02211.

6. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.



**RELEASE ABATEMENT MEASURE (RAM)
TRANSMITTAL FORM**

Release Tracking Number

3 - 36365

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

I. CERTIFICATION OF PERSON UNDERTAKING RAM:

1. I, _____, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: _____ 3. Title: DEPUTY DIR. CAPITAL CONSTRUCTIO
(Signature)

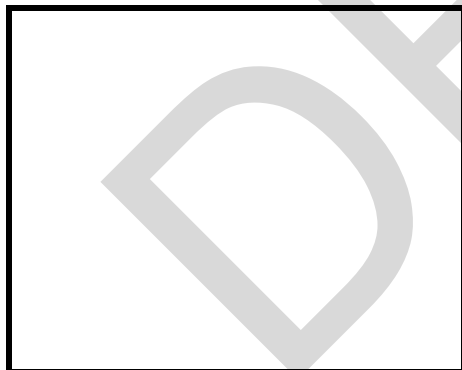
4. For: BOSTON PLANNING AND DEVELOPMENT AGENCY 5. Date: _____
(Name of person or entity recorded in Section F) (mm/dd/yyyy)

6. Check here if the address of the person providing certification is different from address recorded in Section F.

7. Street: _____
8. City/Town: _____ 9. State: _____ 10. ZIP Code: _____
11. Telephone: _____ 12. Ext.: _____ 13. Email: _____

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO \$10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE

Date Stamp (DEP USE ONLY:)



**Release Abatement Measure Plan
Parcel P-3
Boston (Roxbury), Massachusetts
MassDEP RTNs 3-15009 and 3-36365**

Attachment to Release Abatement Measure Transmittal Form BWSC106

Section H, Question 2. Required Attachment and Submittals

The response actions described in this Release Abatement Measure Plan are subject to the provisions of Notice of Non-Compliance (NON-NE-07-3A146) issued by MassDEP to the Boston Redevelopment Authority (now BPDA) on October 22, 2007.

DRAFT

Appendix B

Public Notice Letters

DRAFT

DRAFT January xx, 2021
Project 2002082

Mr. Carl Spector
Environment Department Director
One City Hall Square, Room 805
Boston, MA 02201

Dear Mr. Spector:

**Re: Release Abatement Measure Plan
Parcel P-3: Whittier and Tremont Street
Boston (Roxbury), Massachusetts
MassDEP RTNs 3-15009 and 3-36365**

GEI Consultants, Inc. is hereby notifying your office that a Release Abatement Measure (RAM) Plan is being submitted to the Massachusetts Department of Environmental Protection (MassDEP) for the above-referenced site.

The work includes management and disposal of contaminated soil at the property. The work associated with the RAM is expected to be completed in 2021.

The RAM Plan is on file with the MassDEP Northeast Regional Office (NERO) in Wilmington, Massachusetts concurrently with this letter and is available for review online at <https://eeaonline.eea.state.ma.us/portal#!/search/wastesite>, searchable under RTNs 3-0015009 and 3-0036365. This notification is made in fulfillment of the public notice requirements of the MCP (310 CMR 40.1403).

Please contact me at 781-721-4012 or igladstone@geiconsultants.com if you have any questions.

Sincerely,

GEI CONSULTANTS, INC.

Ryan S. Hoffman, P.G., LSP
Senior Project Manager

Ileen S. Gladstone, P.E., LSP, LEED AP
Senior Vice President

RSH:jam
Enclosure

c: Bureau of Waste Site Cleanup, MassDEP-NERO

DRAFT January xx, 2021
Project 2002082

Ms. Rita Nieves, RN, MPH, LICSW
Interim Executive Director
Boston Public Health Commission
1010 Massachusetts Avenue, 2nd Floor
Boston, MA 02218

Dear Ms. Nieves:

**Re: Release Abatement Measure Plan
Parcel P-3: Whittier and Tremont Street
Boston (Roxbury), Massachusetts
MassDEP RTNs 3-15009 and 3-36365**

GEI Consultants, Inc. is hereby notifying your office that a Release Abatement Measure (RAM) Plan is being submitted to the Massachusetts Department of Environmental Protection (MassDEP) for the above-referenced site.

The work includes management and disposal of contaminated soil at the property. The work associated with the RAM is expected to be completed in 2021.

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Please contact me at 781-721-4012 or igladstone@geiconsultants.com if you have any questions.

Sincerely,

GEI CONSULTANTS, INC.

Ryan S. Hoffman, P.G., LSP
Senior Project Manager

Ileen S. Gladstone, P.E., LSP, LEED AP
Senior Vice President

RSH:jam
Enclosure

c: Bureau of Waste Site Cleanup, MassDEP-NERO

Appendix C

Construction Specifications [RESERVED]

DRAFT

Appendix D

Remedial Additives Plan

DRAFT

Remedial Additives Plan

This Remedial Additives Plan was prepared to support a Release Abatement Measure (RAM), per 310 CMR 40.0444. The objective of applying Remedial Additives as part of the RAM is to treat TCLP lead contaminated soils via stabilization. TCLP lead contaminated soils are within the Lead Hot Spot shown in Fig. 2. Additional similar soil could be identified during future assessment for the remainder of the excavations for the project.

Surrounding Receptors

The Site is in a mixed commercial and residential area of Boston, Massachusetts. The area of treatment is potentially within 100 feet of occupied residences; therefore, this Remedial Additive Plan was developed per 310 CMR 40.0046(3).

Proposed Treatment and Remedial Additive Application

Approximately 250 cubic yards of TCLP lead-contaminated soil (leachable lead greater than 5 milligrams per liter [mg/L]) may be treated prior to excavation and off-site disposal. Additional soil sampling may be performed to further delineate the area of this soil and to minimize the amount of soil to be managed as hazardous waste. If the soil is treated, a proprietary reagent will be applied (approximately 2% to 7% by weight) to the affected soil and mixed with the bucket of an excavator. The zone of treatment is between 5 and 7 feet below ground surface. The mixing zone will be sprayed with water to suppress dust and to activate reagents. The Remedial Additive is expected to be applied only once.

Current Soil Conditions

Soil at the Site consists of shallow fill underlain by organic soil. The treatment zone is expected to be entirely within the shallow fill interval. Laboratory analyses indicated that lead and polycyclic aromatic hydrocarbons were detected in the soil at concentrations greater than the applicable MCP RCS-1 values. The TCLP lead concentration in one soil sample (8.3 mg/L at boring B211) is greater than the hazardous waste threshold of 5 mg/L.

Current Groundwater Conditions

Groundwater at the Site contains low levels of VOCs, PAHs, and some metals. Lead was not detected above the laboratory reporting limit. Groundwater is present at depths ranging from approximately 8 to 13 feet at the Site, which is below the anticipated treatment zone. No mounding analysis was performed to evaluate effects of the Remedial Additive on the groundwater table. The Remedial Additive is a dry powder to be mixed into soil and wetted with water.

Post-Application Soil Monitoring

After the Remedial Additive is applied, confirmatory samples will be collected to evaluate the effectiveness of the treatment. Additional Remedial Additive will be applied if TCLP lead concentrations need to be further reduced.

Post-Application Groundwater Monitoring

Groundwater is present at depths ranging from approximately 8 to 13 feet at the Site, which is below the anticipated treatment zone. Treated soil will be removed very soon after confirming the effectiveness of the treatment. Consequently, monitoring of groundwater conditions and hydraulic control are not necessary during application of the Remedial Additive.