River's Edge
484 – 490 Boston Post Road
Wayland, Massachusetts
Release Tracking Number (RTN): 3-36013

PERMANENT SOLUTION WITH NO CONDITIONS STATEMENT

SEPTEMBER 6, 2022

PREPARED FOR:
Alta River's Edge, LLC
c/o WP East Acquisitions LLC
91 Hartwell Avenue
Lexington, MA 02421

SUBMITTED TO:
Massachusetts Department of Environmental Protection
Northeast Regional Office
205B Lowell Street
Wilmington, MA 01887

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VERTEX PROJECT NO: 67404

September 6, 2022

Massachusetts Department of Environmental Protection
Northeast Regional Office
205B Lowell Street
Wilmington, MA 01887

Re: **Permanent Solution with No Conditions Statement**
River's Edge
484-490 Boston Post Road
Wayland, Massachusetts 01778
VERTEX Project No. 67404
Release Tracking Number (RTN): 3-36013

Attention Bureau of Waste Site Cleanup:

The Vertex Companies, LLC (VERTEX) prepared this Permanent Solution with No Conditions Statement for the release listed by the Massachusetts Department of Environmental Protection (MassDEP) under Release Tracking Number (RTN) 3-36013. The release condition associated with the RTN is semi-volatile organic compounds (SVOCs), lead, antimony, and copper in soil and dissolved nickel and dissolved arsenic in groundwater at the above reference property (the Site).

On January 8, 2021, a Release Abatement Measure (RAM) Plan was submitted to the MassDEP under RTN 3-36013 and eDEP Transaction No. 1244882 by VERTEX on behalf of Alta River's Edge, LLC, to outline methods for management of Site soils associated with the development of the Site. On April 19, 2022, A RAM Completion Report was submitted under RTN 3-36013 and eDEP Transaction No. 1338816 for the Site.

On April 19, 2022, VERTEX submitted a Downgradient Property Status (DPS) Opinion to the MassDEP under RTN 3-36013 and eDEP Transaction No. 1365013. The DPS Opinion documented that the dissolved nickel and dissolved arsenic release to groundwater at the Site originated from a hydraulically upgradient source.

As a result of response actions conducted under the RAM, which included the excavation and off-site transport of impacted fill soils, a condition of No Significant Risk of harm to human health, public welfare, safety, and the environment for current and reasonably foreseeable activities and uses has been achieved for the Site.

This document was prepared on behalf of the Alta River's Edge, LLC, an Eligible Person as defined by the Massachusetts Contingency Plan (MCP) in accordance with the provisions of 310 CMR 40.1040 of the MCP.

Our professional opinion and the conclusions contained herein are based solely on the scope of work conducted as described in the following report and are subject to the Qualifications contained herein.

Please do not hesitate to contact the undersigned should you have any questions or require additional information.

Sincerely,

The Vertex Companies, LLC

Madeline Juffras
Assistant Project Manager

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PERMANENT SOLUTION WITH NO CONDITIONS STATEMENT

River's Edge
484-490 Boston Post Road
Wayland, Massachusetts 01778
VERTEX Project No. 67404
Release Tracking Number (RTN): 3-36013

1.0 GENERAL RELEASE INFORMATION

1.1 Introduction

On behalf of Alta River's Edge, LLC (Alta), The Vertex Companies, LLC (VERTEX) prepared this Permanent Solution with No Conditions (PSNC) Statement to document response actions conducted at the Massachusetts Department of Environmental Protection (MassDEP) Release Tracking Number (RTN) 3-36013 oil and/or hazardous materials (OHM) Disposal Site (the "Site"). The Site is located at 484-490 Boston Post Road in Wayland, Massachusetts (the "Property").

Response actions were conducted at the Site to address metals and semi-volatile organic compounds (SVOCs) in a 32,000 cubic-yard soil stockpile and metals in soil at a former firing range, at concentrations exceeding Massachusetts Contingency Plan (MCP) RCS-1 Reportable Concentrations (the "PSNC Area"). Response actions to address the metals and SVOCs in soil at the PSNC Area were conducted as a Release Abatement Measure (RAM). During the RAM, soil within the 32,000 cubic-yard soil stockpile and the soil located at the former firing range was excavated reused, recycled, or disposed of off-site.

Dissolved metal concentrations exceeding MCP RCGW-1 Reportable Concentrations were detected in groundwater at the Site and are associated with RTN 3-36013; however, the reportable concentrations of dissolved metals in groundwater originated from the former Sudbury Landfill located a hydraulically upgradient. On April 19, 2022, Alta submitted a VERTEX-prepared Downgradient Property Status (DPS) Opinion to the MassDEP under RTN 3-36013 documenting that the reportable concentrations of dissolved metals in groundwater originated

off-site at a hydraulically upgradient location and migrated onto the Property. Because the DPS Opinion addresses the reportable concentrations in groundwater, this PSNC Statement does not address the reportable concentrations identified in groundwater.

On January 8, 2021, Alta submitted a VERTEX-prepared RAM Plan to the MassDEP under RTN 3-36013 for the management of Site soil and on April 19, 2022, Alta submitted a VERTEX-prepared RAM Completion Report for the RAM under eDEP Transaction No. 1338816. As a result of the RAM, which included excavation of impacted soil from the 32,000 cubic-yard stockpile and former firing range at the Property, a condition of No Significant Risk of harm to human health, public welfare, safety, and the environment for current and reasonably foreseeable activities and uses has been achieved for the PSNC Area.

As such, this PSNC submittal has been prepared on behalf of Alta River's Edge, LLC, in accordance with the provisions contained in MCP section 40.1000.

1.2 Person/Entity Undertaking Response Actions and Licensed Site Professional

PERSON UNDERTAKING RESPONSE ACTIONS	LICENSED SITE PROFESSIONAL
Alta River's Edge, LLC 91 Hartwell Avenue Lexington, MA 02421	Jesse Freeman, PE, LSP The Vertex Companies, Inc. 100 North Washington Street, Suite 302 Boston, MA 02114 Tel: 617-275-5407

1.3 Type of Permanent Solution

This Statement supports a finding that a condition of Condition of No Significant Risk to human health, public safety, welfare, and the environment and a "Permanent Solution with No Conditions" has been achieved for RTN 3-36013.

2.0 SITE AND PROPERTY DESCRIPTION AND HISTORY

The Property address is 484-490 Boston Post Road in Wayland, Massachusetts. The latitude and longitude of the approximate center of the Property is 42.36413 degrees north and -71.38208 degrees east. Figure 1 is a locus map adopted from the 2012 United States Geological Survey (USGS), Framingham 7.5-minute Topographic Quadrangle.

2.1 Site and Property Description

The area of the Property is approximately 8.25 acres in Wayland, Massachusetts, identified by the Town of Wayland Assessor as Map 22, Lot 6. Alta is currently redeveloping the Property into a multiunit residential community. The Disposal Site boundary associated with RTN 3-36013 consists of the entire Property. Dissolved metals in groundwater associated with RTN 3-36013, which have been addressed with a DPS Opinion submitted to the MassDEP, extend an unknown distance off-Property to the north and west. Metals and SVOCs in soil associated with RTN 3-36013 were located in the northwestern and eastern portions of the Property and did not extend beyond the Property boundary.

The Property is bounded to the north and east by forested wetlands, to the south by Boston Post Road, beyond which is a former landfill, and to the east by the Sudbury Landfill. Occupied structures are not currently located at the Property. The Property, PSNC Area, and Site boundaries are depicted on Figure 2.

2.2 Physical and Environmental Setting

The 2012 USGS Topographic Quadrangle Map of Framingham, Massachusetts indicates that the surface elevation of the Property is approximately 125 to 150 feet relative to the National Geodetic Vertical Datum of 1988 (NGVD). The surface elevation at the western edge of the Property is approximately 150 feet and the elevation of eastern portion of the Property is approximately 125 feet, with the downward slope continuing east toward the wetlands and the

Sudbury River. No naturally occurring surface water bodies or wetland areas are on the Property; however, wetland areas immediately abut the Property to the north and east (on the opposite side of the Town of Wayland Transfer Station Access Road). The closest naturally occurring non-ephemeral surface water body is the Sudbury River. The riverbank is located approximately 320 feet east of the Property. According to the National Wetlands Inventory (NWI) Wetlands Mapper maintained by the United States Fish and Wildlife Service (USFWS), the area between the Property and the Sudbury River consists of wetlands. An additional forested wetland is located northerly adjacent to the Property and occasionally contains surface water. According to the Federal Emergency Management Administration (FEMA) Flood Insurance Rate Map for the Property, the Property is not located within a 100-year or 500-year flood zone.

According to the February 1, 2022, MassDEP Bureau of Waste Site Cleanup (BWSC) Phase I Site Assessment Map downloaded from the MassDEP Online Map Viewer (Appendix A), most of the Property is located within an area mapped as medium and high yield aquifer. According to the Town of Wayland, municipal drinking water is provided to the area by the Town of Wayland from eight water supply wells, each of which are more than 4,000-feet from the Property and on the opposite bank of the Sudbury River. Additionally, according to the Massachusetts Geographic Information System (MassGIS) MassMapper website, Wellhead Protection Areas, including the Zone II areas of aquifer recharge associated with the eight water supply wells are more than 900 feet from the Property. According to the MassDEP online well database, domestic wells are not located within 500 feet of the Property. The nearest occupied residential dwelling is located more than 1,900 feet northwest from the Property.

According to the MassGIS MassMapper website, Areas of Critical Environmental Concern (ACEC), protected open space, or current or potential habitats of rare wildlife are not located on the Property. Rare wetland wildlife habitat is located within the mapped wetlands east of the Property.

2.3 Property History

Based on a review of readily available historical information, including historical aerial photographs, historical topographic maps, and previous reports prepared by others (copies of these reports were submitted in support of the April 19, 2022, DPS Opinion), the western portion of the Property prior to the commencement of development activities consisted of cleared undeveloped land until 1983 when it was developed with a Town of Wayland wastewater treatment plant, known as the Wayland-Sudbury Septage Treatment Facility. The Wayland-Sudbury Septage Treatment Facility remained in operation until 2009 and included a building, an equalization tank, primary clarifier tank, thickener tank, wastewater discharge basins, an asphalt-paved parking area, and a hazardous material storage trailer. After operations of the Wayland-Sudbury Septage Treatment Facility had ceased, the western portion of the Property was used for school bus parking.

Around the time of development of the Wayland-Sudbury Septage Treatment Facility, the Wayland Department of Public Works (DPW) (formerly known as the Wayland Highway Department) began to use the eastern portion of the Property for storage of excess materials. By 2017, two large stockpiles occupied most of the eastern portion of the Property. One of the stockpiles consisted of approximately 34,000 cubic-yards of soil containing minor amounts of demolition debris, and crushed asphalt, brick, and concrete. The second stockpile consisted of approximately 4,500 cubic-yards of screened soil. Transportation of excess DPW material to the Property for storage ceased in 2017.

The northwestern portion of the Property was utilized as a firing range by the Wayland Police Department from at least the mid-1970s until 2017. In preparation for redevelopment, in 2021, the structures associated with the Wayland-Sudbury Septage Treatment Facility were demolished, and the stockpiled materials and firing range soils were removed as a RAM (Section 3.0). The locations of the former septage facility, firing range, and stockpiled DPW materials are shown on Figure 2.

2.4 Release Compliance Histories

The MassDEP assigned four RTNs to releases of OHM identified at the Property. RTNs 3-1724 and 3-34474 were previously closed under the MCP. RTN 3-36013 was assigned to the detection of SVOCs and metals in soil, and to the detection of dissolved arsenic, dissolved nickel, and ammonia in groundwater, at concentrations exceeding MCP Reportable Concentrations during an investigation conducted prior to Alta's purchase of the Property. RTN 3-37278 was assigned to the detection of per and polyfluoroalkyl substances (PFAS) compounds in groundwater at concentrations exceeding MCP Reportable Concentrations. Additional information regarding the four RTNs is included below.

2.4.1 RTN 3-1724 (Closed DEPNDS)

In 1986, an estimated 3-gallons of unknown oil "ostensibly from a restaurant grease trap" was reported to have discharged into the septage facility's receiving tanks. Based on available documentation, the plant operator identified this wrongful discharge during the unloading of the last truck prior to the discovery and shut down valves isolating the discharged material to a "Raw Well" and restricting pathways that would have resulted in a release to the environment. The oil was subsequently removed under Hazardous Waste Manifest documentation, and a sample was collected and analyzed for polychlorinated biphenyls (PCBs). PCBs were reportedly not detected above the laboratory detection limit.

The release was assigned RTN 3-001724; however, in 1993, after additional investigations by the MassDEP and based on available documentation, the MassDEP determined the site was no longer considered a "Disposal Site" under the MCP and changed the RTN status to DEPNDS (MassDEP Not a Disposal Site).

2.4.2 RTN 3-34474 (Closed PSNC)

In 2017 during pre-purchase environmental due-diligence activities VERTEX identified suspect asbestos-containing waste materials (ACWM) within a small area of the 34,000 cubic-yard stockpile. Six samples of suspect ACWM were collected and submitted for polarized light microscopy (PLM) analysis. It was determined that greater than 1 pound of asbestos was present, constituting a condition for which the MCP requires notification to be made to the MassDEP within 2 hours of the owner's or operator's first knowledge. The Town of Wayland notified the MassDEP of the release, and the release was assigned RTN 3-34474.

In December 2018, following MassDEP approval of a Non-Traditional Asbestos Work Plan (NTAWP), VERTEX oversaw the excavation and off-site transport of approximately 2,000 cubic-yards of commingled soil and ACWM from the on-site stockpile. The removal and off-site disposal of the ACWM was conducted as an Immediate Response Action (IRA) in accordance with an IRA Plan prepared by CMG Environmental, Inc. (CMG) on behalf of The Town of Wayland and submitted to the MassDEP on October 12, 2017. No additional ACWM was observed in the excavation sidewalls and/or base during the remediation and as noted above, analysis of soil samples did not detect asbestos fibers in any sample.

On January 26, 2021, this RTN was closed with a Permanent Solution Statement with No Conditions.

2.4.3 RTN 3-36013 (Release Subject to this PSNC)

In 2019, VERTEX performed a Phase II Limited Subsurface Investigation (LSI) in support of due diligence for a real-estate transaction. Information about the scope and methods of this Phase II LSI is presented in Section 3.0. As part of the Phase II LSI, VERTEX collected environmental samples to investigate Recognized Environmental Conditions (RECs) identified during a Phase I Environmental Site Assessment (ESA) and to characterize the stockpiled soils for off-site disposal.

Based on the analytical results collected during the Phase II LSI:

- SVOCs and total lead were detected exceeding MCP RCS-1 Reportable Concentrations in soil samples collected from the now 32,000 cubic-yard stockpile (following the removal of 2,000 cubic-yards of comingled soil and ACWM from the 34,000 cubic-yard stockpile as part of response actions associated with RTN 3-34474, 32,000 cubic-yards remained).

- Total antimony and lead were detected at concentrations exceeding MCP RCS-1 Reportable Concentrations in soil samples collected from the former firing range.

- Dissolved arsenic and dissolved nickel were detected at concentrations exceeding MCP RCGW-1 Reportable Concentrations in groundwater samples collected at the Property.

- Ammonia as nitrogen was detected at a concentration exceeding the MCP RCGW-1 Reportable Concentration for ammonia; however, it was subsequently determined in consultation with the laboratory that the ammonia as nitrogen analysis is a total constituent analysis and comparison to the MCP Reportable Concentrations applicable only to dissolved ammonia is not appropriate. The MCP does not contain a Reportable Concentration for ammonia as nitrogen (additional information regarding this conclusion is included in the RAM Completion and DPS Comment Responses document submitted to MassDEP by VERTEX on April 19, 2022, under RTN 3-36013 and eDEP Transaction No. 1365041).

The detected concentrations of SVOCs, antimony, and lead in soil and dissolved arsenic, and dissolved nickel in groundwater constituted a reportable condition pursuant to 310 CMR 40.0315(1) of the MCP. The release was reported to the MassDEP on December 2, 2019, via electronic submittal of MassDEP Bureau of Site Cleanup Release Notification Form BWSC-103. Following notification, the MassDEP assigned the release RTN 3-36013.

On December 2, 2020, CMG submitted a Phase I Initial Site Investigation (ISI) and Tier Classification Report for RTN 3-36013 on behalf of the Town of Wayland. RTN 3-36013 was classified as a Tier I Disposal Site.

On December 28, 2020, the Town of Wayland and the MassDEP received a petition from Wayland residents. The petition requested that the Disposal Sites identified by RTNs 3-36013 and 3-34474 be designated as Public Involvement Plan (PIP) sites in accordance with MCP section 40.1404. VERTEX, on behalf of Alta, prepared a Draft PIP that was presented to the public during a live online public meeting open to interested parties on March 18, 2021. Following receipt of public comment, the final PIP was issued on June 11, 2021. Additional public meetings to discuss draft reports and/or completed remedial actions were subsequently hosted on June 24, 2021, November 18, 2021, and February 17, 2022.

The dissolved arsenic and dissolved nickel in groundwater associated with RTN 3-36013 were attributed to migration from an off-site hydraulically upgradient source, as detailed in the DPS Opinion that was submitted on April 19, 2022. Based on the submittal of a DPS Opinion and absence of an Imminent Hazard associated with the metals in groundwater, this PSNC Statement does not address groundwater impacts.

Although there are no promulgated RCGW-1 Reportable Concentrations for total ammonia as nitrogen, the groundwater flow direction and detected concentration gradient of total ammonia as nitrogen indicate that it is originating from the upgradient landfill. This is explained in greater detail in the RAM Completion and DPS Comment Responses document, which VERTEX submitted to MassDEP on April 19, 2022, under RTN 3-36013 and eDEP Transaction No. 1365041.

Soil impacts associated with RTN 3-36013 were addressed with a RAM conducted in accordance with a RAM Plan submitted by VERTEX on January 8, 2021. RAM activities were documented in the RAM Status Reports dated March 30, 2021, May 7, 2021, and November 4, 2021, and a RAM Completion Report submitted to MassDEP on April 19, 2022.

2.4.4 RTN 3-37278 (Closed DPS)

Between September 30 and October 1, 2021, VERTEX oversaw the installation of six additional permanent monitoring wells at the Property. These six monitoring wells, along with two previously installed on-site monitoring wells, were sampled in October 2021 to investigate for the potential presence of 14 PFAS compounds in Property groundwater. The groundwater analyses detected PFAS6 (the sum of the six PFAS compounds for which MCP Reportable Concentrations and cleanup standards have been promulgated in the MCP) ranging from 0.011 to 0.22 micrograms per liter (µg/L), exceeding the MCP RCGW-1 Reportable Concentration of 0.02 µg/L in seven of the eight groundwater samples.

The detected concentration of PFAS6 in groundwater constituted a reporting condition pursuant to 310 CMR 40.0315(1) of the MCP. The release was reported to the MassDEP on February 8, 2022, via electronic submittal of the MassDEP Bureau of Site Cleanup Release Notification Form BWSC-103. Following notification, the MassDEP assigned the release RTN 3-37278. Groundwater impacts associated with RTN 3-37278 are attributed to migration from an off-site hydraulically upgradient source, as detailed in the DPS Opinion that was submitted on April 19, 2022. Based on the submittal of a DPS Opinion and absence of an Imminent Hazard associated with the PFAS6, further response actions associated with RTN 3-37278 at the Property are not required.

2.4.5 RTN 3-37345

On the morning of February 18, 2022, VERTEX on behalf of Alta, notified the Town of Wayland via a phone message to the Town Planner, Alta's municipal point of contact at that time, of a Condition of Substantial Release Migration (SRM) constituting a condition for which the MCP requires notification to be made to the MassDEP within 72 hours of first knowledge by a party required to notify. The identified SRM condition was the likely presence of PFAS6 in the Town-owned wetland immediately north of the Property, apparently originating from the Sudbury

landfill. VERTEX concluded that PFAS6 was likely to be present in the wetland based on the detection of PFAS6 in a monitoring well located approximately 20 feet south and southeast, and hydraulically downgradient of the wetland. Because the Town did not respond, on the evening of February 18, 2022, Alta, as required by the MCP, notified the MassDEP of the SRM condition. Although Alta's property is not the source of the PFAS, MassDEP assigned RTN 3-37345 to the condition. When the MassDEP was notified of the SRM condition, the draft DPS Opinion for groundwater conditions associated with RTNs 3-36013 and 3-37278 had been issued for public comment in accordance with a Public Involvement Plan instituted for RTN 3-36013, therefore the DPS Opinion did not mention the SRM condition RTN. MassDEP is currently evaluating the need for response actions and identifying potentially responsible parties associated with RTN 3-37345.

2.5 Site Geology and Hydrogeology

2.5.1 Stratigraphy

Based on visual classification of soil samples collected during subsurface investigations completed at the Property, subsurface soils at the Property are described as follows:

- **Urban Fill** – Formerly located within the stockpiled material to ground surface. The urban fill was a brown fine to coarse sand with varying amounts of silt, gravel, and debris including brick, ceramic, glass, coal, wood, asphalt, and concrete. The stockpiled urban fill ranged in thickness between 10 and 15 feet.

- **Till and/or Stratified Drift** – Located at the ground surface to depths of at least 36 feet below ground surface (bgs), consisting of light brown fine to coarse sands and gravels, with varying amounts of silts and cobbles.

Soil boring logs for explorations completed at the Property are included in Appendix C.

2.5.2 Groundwater

VERTEX installed permanent groundwater monitoring wells at the Property during subsurface investigations conducted between 2019 and 2021. The measured depth to groundwater in these monitoring wells ranged from approximately 15 to 30 feet bgs, with average depth to water along the western edge of the Property being closer to 32 feet bgs, and the average depth to water along the eastern edge of the Property measuring approximately 13 feet bgs.

In May 2019, Allen & Major Associates, Inc. (Allen & Major) surveyed the horizontal locations and vertical elevations of the top of the polyvinyl chloride (PVC) casing of the six monitoring wells installed during the VERTEX 2019 investigation and of existing monitoring well MW-3. VERTEX gauging on April 1, 2019, identified groundwater elevations ranging from 116.94 feet to 118.03 feet relative to the National Geodetic Vertical Datum of 1988 (NGVD 1988). Using the measured groundwater elevations, the direction of groundwater flow at the Property was east with a hydraulic gradient of 0.0015.

Following installation of six additional permanent monitoring wells in 2021, Allen & Major surveyed the horizontal locations and vertical elevations of monitoring wells V-201(MW), V-202(MW), and V-301(MW) through V-306(MW). VERTEX gauging on October 11 and 12, 2021 identified groundwater elevations ranging from 116.71 feet to 117.52 feet NGVD 1988 and the direction of groundwater flow at the Property was east with a hydraulic gradient of 0.0011.

VERTEX gauging on February 7, 2022, identified groundwater elevations ranging from 116.66 feet to 117.39 feet NGVD 1988 and the direction of groundwater flow at the Property was east/southeast with a hydraulic gradient of 0.0010.

Table 1 summarizes the measured groundwater elevations and Figure 3 presents contours of equal groundwater elevation as measured on February 7, 2022.

3.0 PROPERTY INVESTIGATION AND REMEDIATION ACTIVITIES

Between 2019 and 2021 multiple subsurface investigations were conducted at the Property by VERTEX. Subsurface investigations at the Property included but was not limited to:

- soil borings;
- test pits;
- soil sampling;
- soil gas sampling;
- installation of groundwater monitoring wells;
- groundwater sampling and;
- gauging of groundwater depths and elevations.

A summary of the subsurface investigations conducted at the Property is presented below. A more detailed summary of subsurface investigations is included in the RAM Completion Report submitted to the MassDEP on April 19, 2022.

- **Property-wide Phase II Limited Subsurface Investigation (March 2019):**
    - A limited subsurface investigation (LSI) was completed at Property to evaluate Property conditions and evaluate potential environmental conditions identified in Phase I Environmental Site Assessments (ESAs). The LSI included completion of soil borings, installation of groundwater monitoring wells, and the collection and analysis of soil, groundwater, and soil gas samples for laboratory analysis.

- **32,000 Cubic-Yard Stockpile (March 2019 – May 2019)**
    - **March 2019** – An Alta subcontractor advanced test pits within the 32,000 cubic-yard soil stockpile under VERTEX observation and VERTEX collected and analyzed soil samples to assess the soil for the presence of OHM and to characterize the soil

for potential off-site re-use, recycling, or disposal. Soil samples were submitted for laboratory analysis of:

- VOCs, SVOCs, total petroleum hydrocarbons (TPH), MCP 14 metals, PCBs, general chemistry, and asbestos.

- **February and March 2021** – VERTEX collected and analyzed additional soil samples from the 32,000 cubic-yard soil stockpile to characterize the soil for disposal or reuse off-site. The table below summarizes the additional analyses:

Sample Designation	Laboratory Analysis	Purpose
TP-C6 (5-10)_TPH1	TPH	Additional TPH analysis for Asphalt Batch Plant Approval
TP-C6 (5-10)_TPH2		
TP-C6 (5-10)_TPH3		
TP-C6 (5-10)_TPH4		
TP-C6 (5-10)_TPH5		
TP-C5 (5-10)_TPH1		
TP-B4 (5-10)_TCLP	TCLP Lead	TCLP lead analysis due to detection of total lead above 100 mg/kg
TP-D3 (5-10)_TCLP	TCLP Lead	TCLP lead analysis due to detection of total lead above 100 mg/kg
TP-D6 (0-5)_TCLP	TCLP Lead	TCLP lead analysis due to detection of total lead above 100 mg/kg
TP-E7 (0-5)_TCLP	TCLP Lead	TCLP lead analysis due to detection of total lead above 100 mg/kg
TP-E7 (5-10)_TCLP	TCLP Lead	TCLP lead analysis due to detection of total lead above 100 mg/kg
TP-E7 (0-5)_N	5 feet north of TP-E7 (0-5)	Delineation of TCLP lead to the north
TP-E7 (5-10)_N	5 feet north of TP-E7 (5-10)	Delineation of TCLP lead to the north
TP-E7 (0-5)_E	5 feet east of TP-E7 (0-5)	Delineation of TCLP lead to the east
TP-E7 (5-10)_E	5 feet east of TP-E7 (5-10)	Delineation of TCLP lead to the east
TP-E7 (0-5)_S	5 feet south of TP-E7 (0-5)	Delineation of TCLP lead to the south
TP-E7 (5-10)_S	5 feet south of TP-E7 (5-10)	Delineation of TCLP lead to the south

Sample Designation	Laboratory Analysis	Purpose
TP-E7 (0-5)_W	5 feet west of TP-E7 (0-5)	Delineation of TCLP lead to the west
TP-E7 (5-10)_W	5 feet west of TP-E7 (5-10)	Delineation of TCLP lead to the west

  - **April and June 2021** – VERTEX collected samples of the soil from under the former 32,000 cubic-yard soil stockpile. The samples were analyzed for the OHM detected in the overlying soil pile at concentrations exceeding MCP RCS-1 Reportable Concentrations to confirm that removal of the soil pile had successfully remediated the OHM. Seven samples were submitted for laboratory analysis of polycyclic aromatic hydrocarbons (PAHs) and one sample was submitted for total lead analysis.

- **4,500 Cubic-Yard Stockpile (March 2019)** – An Alta subcontractor advanced test pits within the 4,500 cubic-yard stockpile to assess the soil for the presence of OHM and to characterize the soil for potential off-site re-use, recycling, or disposal. Soil samples were submitted for laboratory analysis of:

  - VOCs, SVOCs, TPH, MCP 14 metals, PCBs, and general chemistry.

- **Firing Range:**

  - **April 2019** – VERTEX collected soil samples from the former firing range to evaluate site conditions and to characterize soil material for potential off-site re-use, recycling, or disposal. Six samples were submitted for laboratory analysis of lead, antimony, copper, zinc, tungsten, and TCLP extraction and lead analysis. One composite sample was submitted for laboratory analysis of:

    - VOCs, SVOCs, TPH, MCP 14 metals, PCBs, general chemistry, and asbestos.

- **May 2019** – VERTEX oversaw the advancement of test pits within the impacted areas of the firing range to delineate the vertical extent of metal impacts within the firing range. Samples were submitted for laboratory analysis of antimony, copper, and lead.

- **April to May 2021** – VERTEX collected additional soil samples within the firing range and submitted them to the laboratory for TCLP extraction and lead analysis to confirm the soil was stabilized and was no longer considered a characteristic hazardous waste for off-site disposal.

- **May 2021** – VERTEX collected sidewall soil samples within the firing range and submitted them for laboratory analysis of total lead to delineate the horizontal extent of metal impacts within the firing range.

- **May 14, 2021** – VERTEX collected additional soil samples from stockpiles located within the firing range area to meet the testing requirements of the soil receiving facilities. Soil samples were submitted for laboratory analysis of:

    - VOCs, SVOCs, TPH, MCP 14 metals, PCBs, and general chemistry.

- **Pre- and Post-Stabilization Groundwater Investigation (2021)** – VERTEX oversaw the installation of groundwater monitoring wells and collected groundwater samples to assess potential impacts to groundwater from soil stabilization activities. Groundwater samples were submitted for laboratory analysis of dissolved antimony, copper, lead, total phosphorus, and pH.

- **Groundwater Investigation (September to November 2021)** – VERTEX oversaw the installation of groundwater monitoring wells and collected groundwater samples for laboratory analysis. Groundwater samples were analyzed for dissolved arsenic and nickel, n-nitrosodimethylamine (NMDA), 14 PFAS compounds, and ammonia as nitrogen.

A summary of soil analytical results is presented on Tables 2 through 4D, and soil laboratory analytical reports are provided in Appendix D. Soil boring logs and test pit logs are provided in Appendix C.

A summary of groundwater gauging results is presented on Table 1, and a summary of groundwater analytical results is presented on Table 5. Groundwater monitoring well locations are shown on Figure 2. Monitoring well completion reports are provided on the boring logs in Appendix C, and groundwater laboratory analytical reports are provided in Appendix D.

Details related to the specific subsurface investigations conducted within the Property that are relevant to this PSNC Statement are provided below.

3.1.1 Property-wide LSI (March 2019)

From March 26 through March 28, 2019, VERTEX oversaw the advancement of sixteen soil borings, identified as V-101 to V-116, to depths between 10 and 37 feet bgs throughout the Property. Six of the soil borings were completed as permanent groundwater monitoring wells, identified as V-101 (MW), V-102 (MW), V-103 (MW), V-104 (MW), V-105 (MW), and V-106 (MW), as described in the January 2021 RAM Plan.

Soil Sampling and Analysis

VERTEX collected one soil sample from each soil boring V-107 through V-114 from the interval exhibiting the highest photoionization detector (PID) readings, or if no ionizable total volatile organic compounds (TVOCs) were detected by PID, from the interval displaying the most evidence of potential OHM impact (including presence of urban fill materials). Seven soil samples identified as V-107 (5-10), V-108 (0-5), V-109 (5-10), V-110 (5-10), V-111 (0-10), V-112 (0-5), V-113 (0-5), and V-114 (5-10) were submitted to Con-Test Analytical Laboratory (Con-Test) (now known as Pace Laboratories) of East Longmeadow, Massachusetts for analysis to characterize the soil for off-site disposal.

VERTEX also collected one soil sample from boring V-115(5-10') and one soil sample from boring V-116(0-5'), which were advanced south and east of existing electrical transformers at the southwestern area of the Property. The soil samples were submitted to Con-Test for analysis of PCBs by United States Environmental Protection Agency (USEPA) Method 8082 with Soxhlet extraction.

Laboratory analytical results did not detect target analytes in soil samples collected during the LSI at concentrations exceeding the applicable MCP RCS-1 Reportable Concentrations. Table 2 summarizes the soil analytical results, and Figure 2 depicts the soil boring and monitoring well locations. Additional details regarding the 2019 LSI are provided in the January 2021 RAM Plan.

Groundwater Sampling and Analysis

In April 2019 and December 2020, groundwater samples were collected from monitoring wells V-101 (MW) through V-106 (MW), and from previously existing monitoring well MW-3 installed by others. Prior to sampling, the monitoring wells were gauged using an electronic interface probe, to measure the depth to groundwater and to detect the presence of non-aqueous phase liquid (NAPL) if present at thicknesses greater than 0.01-inches. The presence of NAPL was not identified during gauging activities.

Following gauging, groundwater samples were collected from the monitoring wells in general accordance with USEPA low-flow sampling techniques. Wells were purged using dedicated polyethylene tubing and a peristaltic pump. Drawdown of the groundwater in the well and water quality parameters, including temperature, pH, conductivity, dissolved oxygen (D.O.), oxygen, reduction potential (ORP), and turbidity, were recorded every three to five minutes until readings were stable as defined by the USEPA, over three consecutive readings. Following stabilization, groundwater samples from the seven wells were submitted to the laboratory for analysis.

Based on the laboratory analytical results, dissolved arsenic, ammonia, and dissolved nickel were detected in groundwater samples at concentrations exceeding the MCP RCGW-1 Reportable

Concentrations of 10 µg/l, 1,000 µg/l, and 100 µg/l, respectively. No other target analytes were detected in the groundwater samples at concentrations exceeding the MCP RCGW-1 Reportable Concentrations.

Based on a review of historical environmental reports, groundwater impacts including dissolved arsenic were detected in groundwater at the abutting upgradient Sudbury Landfill at concentrations also exceeding the MCP RCGW-1 reportable concentrations. Furthermore, the highest concentrations of metals and ammonia were detected in hydraulically upgradient portions of the Property. Therefore, these detected concentrations were attributed to migration in groundwater from the Sudbury Landfill and as explained further in the DPS Opinion submitted to the MassDEP on April 19, 2022.

3.1.2 32,000 Cubic-Yard Stockpile

3.1.2.1 Initial Test Pit Investigation (March 2019)

In February 2019, the 32,000 cubic-yard stockpile of soil containing minor amounts of demolition debris, and crushed asphalt, brick, and concrete that previously covered the eastern portion of the Property was graded to an approximate height of 10 to 15 feet. Following the completion of the grading activities, the graded stockpile was surveyed and gridded into thirty-nine 50-foot by 50-foot cells (identified as A1 to A5, B1 to B6, C1 to C6, D1 to D7, E2 to E8, F3 to F8 and G6 to G7). In March 2019, VERTEX oversaw the advancement of test pits within each of the 39 cells to depths ranging from ground surface to 10 to 15 feet bgs. VERTEX collected vertically composited soil samples from each five-foot depth interval within each cell for a total of 80 soil samples collected from the 32,000 cubic-yard stockpile. The soil samples were placed into laboratory-supplied sample container and were submitted to Con-Test (for analyses other than asbestos) and CEI Laboratories (CEI) of Cary, North Carolina (for asbestos analysis) for analyses to characterize the soil for off-site disposal.

PAHs and total lead were detected in 14 soil samples collected from the 32,000 cubic-yard stockpile at concentrations exceeding the applicable MCP RCS-1 Reportable Concentrations. Additional target analytes were not detected in soil samples collected from the 32,000 cubic-yard stockpile at concentrations exceeding the applicable MCP RCS-1 Reportable Concentrations. Table 3A presents a summary of soil analytical results and Figure 4A shows the approximate layout of the sample grid. Additional details regarding the characterization of the 32,000 cubic-yard stockpile are provided in the RAM Completion Report submitted to the MassDEP on April 19, 2022.

Additional Characterization Sampling (February & March 2021)

In February and March 2021, VERTEX collected and analyzed an additional 19 soil samples (from grid cells B4, C5, C6, D3, D6 and E7) within the 32,000 cubic-yard stockpile. The soil samples were collected to obtain the laboratory analytical data to meet the soil acceptance criteria of various soil recycling/disposal facilities. Each sample was collected as a 5-point composite from a test pit advanced within the center of the designated characterization cell. The soil samples were placed into laboratory-supplied sample container and were submitted to Con-Test for analyses of either total petroleum hydrocarbons (TPH) or toxicity characteristic leaching procedure (TCLP) extractable lead (TCLP lead) to characterize the soil for off-site disposal.

Based on the analytical results, TCLP lead concentration exceeding the Resource Conservation and Recovery Act (RCRA) threshold for classification of characteristic hazardous wastes was detected in the soil sample collected from cell E7 at the 0 to 5 foot and 5 to 10-foot bgs depth intervals. To delineate the extent of the leachable lead lead, VERTEX oversaw the excavation of four additional test pits, located 5 feet horizontally, north, south, east, and west of the original samples collected from cell E7 and at the same depths. VERTEX collected one five-point composite from each of the four test pits from the 0 to 5-foot bgs and from the 5 to 10-foot bgs depth intervals and submitted each sample to Con-Test for analysis of TCLP lead by USEPA

Methods 1311 and 6010D. Based on the analytical results, TCLP lead was not detected in the eight samples at concentrations exceeding the RCRA regulatory threshold. The TCLP lead was stabilized to render the soil non-hazardous prior to its transportation and disposal off-site. The entire 32,000 cubic-yard stockpile was removed from the Property and disposed of or reused at appropriately permitted off-site facilities.

Table 3B presents a summary of the additional soil characterization analytical results and Figure 4A shows the approximate layout of the sample grid. Additional details are provided in the April 19, 2022, RAM Completion Report.

Post Excavation Confirmation Sampling and Analysis (April 2021)

Within the 32,000 cubic-yard stockpile, PAHs were detected at concentrations exceeding the applicable MCP RCS-1 Reportable Concentrations in soil samples from eight characterization cells (A5, C1, C3, C6, D1, D6, E3, and F3) at the 5-to-10-foot bgs interval. The total lead concentration in the sample collected from cell E7 at the 5 to 10-foot bgs depth interval exceeded the applicable MCP RCS-1 Reportable Concentration. At these cell locations, the 5-to-10-foot bgs depth interval was in contact with the underlying native soils.

After the soil in the cells was excavated and transported off-site, VERTEX collected samples of the soil that underlaid stockpile cells A5, C1, C3, C6, D1, D6, E3, E7, and F3 (samples were designated TP-[Cell Designation]-CONF). One sample was collected from under each of the nine stockpile cells. Con-Test analyzed the nine samples to confirm that the previously overlying PAHs and total lead concentrations exceeding MCP RCS-1 Reportable Concentrations did not extend into the underlying native soils

The soil samples collected from cells A5, C1, C3, C6, D1, D6, E3, and F3 were submitted for laboratory analysis of PAHs by USEPA Method 8270, and the soil sample collected from cell E7 was submitted for laboratory analysis of total lead by USEPA Method 6010.

Laboratory analysis did not detect PAHs in the eight samples collected below cells A5, C1, C3, C6, D1, D6, E3, and F3 or total lead in the sample collected below cell E7 at concentrations exceeding applicable MCP RCS-1 Reportable Concentrations. Table 3C presents a summary of the post-excavation confirmatory soil analytical results and Figure 4B shows the confirmatory sampling locations. Additional details are provided in the April 19, 2022, RAM Completion Report.

Additional Characterization Stockpile Sampling and Analysis (June 2021)

On June 17, 2021, VERTEX collected and analyzed two additional soil characterization samples, identified as V-301-SP-20210617 and V-302-SP-20210617, from a 1,500 cubic-yard stockpile generated following cleanup activities at the Property following the removal of the 32,000 cubic-yard stockpile. Soil within the stockpile consisted of co-mingled native material and spoils from the 32,000 cubic-yard stockpile. The samples were collected into laboratory-supplied sample containers, stored on ice, and transferred under chain of custody to Con-Test for analysis to characterize the soil for off-site disposal.

No target analytes were detected in the composite soil samples at concentrations exceeding the MCP RCS-1 Reportable Concentrations.

The soil characterized by samples V-301-SP-20210617 and V-302-SP-20210617 was transported for reuse at the Winchendon Landfill in Winchendon, Massachusetts. A summary of the analytical results is included in Table 3D. Additional details are provided in the April 19, 2022, RAM Completion Report.

3.1.3 4,500 Cubic-Yard Stockpile (March 2019)

In March 2019, an Alta subcontractor advanced five test pits within the 4,500 cubic-yard stockpile, under VERTEX oversight. The test pits were identified as TP-V-101 to TP-V-105. The 4,500 cubic-yard stockpile was reportedly created from screened material from the 32,000 cubic-yard stockpile prior to Alta's purchase of the Property. VERTEX collected one composite soil

sample from each test pit. The soil samples were placed into laboratory-supplied sample containers and then submitted to Con-Test for analysis to characterize the soil for off-site disposal.

The analyses detected TPH in soil sample TP-V-102 at concentrations exceeding applicable MCP RCS-1 Reportable Concentrations. No additional target analytes were detected in soil samples collected from the 4,500 cubic-yard stockpile at concentrations exceeding applicable MCP RCS-1 Reportable Concentrations. Table 2 summarizes the soil analytical results and Figure 4A shows the approximate locations where the test pits were advanced within the 4,500 cubic-yard stockpile. Additional details are provided in the April 19, 2022, RAM Completion Report.

3.1.4 Firing Range

Initial Test Pit Investigation (April 2019)

In April 2019, VERTEX established a sampling grid across the former firing range to assist with the collection of x-ray fluorescence (XRF) screening data, as shown Figure 5A. The grid established approximately 10-foot by 10-foot cells throughout the flat area of the firing range, and approximately 10-foot by 5-foot cells along each of the two berms located on the west side of the firing range. VERTEX collected discrete soil samples from approximately 0 to 2 feet bgs within the center of each cell and screened the sample for total lead content using a handheld XRF analyzer. XRF analyzer readings are not considered actual total lead concentrations in the soil samples but are useful indicators of relative lead concentrations between locations. Soil samples were selected for laboratory analysis based on the screening results.

XRF screening identified total lead concentrations in screened soil samples at concentrations up to 8,568 parts per million (ppm). The maximum concentration was identified in the sample collected from grid cell J3. The average lead concentrations throughout the area measured approximately 1,050 ppm.

VERTEX collected one soil sample from each of the six grid cells where elevated XRF readings (between 3,850 ppm and 9,410 ppm) were obtained. Soil samples V-201 (collected from grid cell K4), V-202 (collected from grid cell K1), V-203 (collected from grid cell E4), V-204 (collected from grid cell N1), V-205 (collected from grid cell M3), and V-206 (collected from grid cell J3) were submitted to Con-Test for analysis of lead, antimony, copper, zinc, tungsten, and TCLP extraction and lead analysis. An additional composite soil sample identified as FIRING RANGE, was created from aliquots collected from each of the six grid cells listed above and submitted to Con-Test for analysis to characterize the soil for off-site disposal.

Based on the laboratory analytical results, total lead was detected in five out of the six firing range soil samples at concentrations exceeding the MCP RCS-1 Reportable Concentration of 200 mg/kg. Additionally, antimony and copper were detected at concentrations exceeding the MCP RCS-1 Reportable Concentrations in three of the six soil samples and in four of the of the six soil samples, respectively. Each of the soil samples was also extracted by TCLP and the extract analyzed for lead. Based on the analytical results, each of the six soil samples, identified as V-201 through V-206, contained TCLP lead at concentrations exceeding the RCRA 5 milligrams per liter (mg/L) threshold for classification as characteristic hazardous waste.

Analysis of the "FIRING RANGE" composite soil sample detected antimony and lead at concentrations exceeding the applicable MCP RCS-1 Reportable Concentrations. No other target analytes were detected in the composite soil sample at concentrations exceeding the MCP RCS-1 Reportable Concentrations.

Figure 5A shows the approximate layout of the firing range sampling grid with the corresponding grid identification numbers. Table 4A presents the soil analytical results. Additional details are provided in the April 19, 2022, RAM Completion Report.

Vertical Delineation of Metals in Firing Range Soil (May 2019)

In May 2019, VERTEX oversaw the advancement of 11 test pits within the impacted areas of the firing range to assess the vertical depth of elevated metal concentrations within the firing range. Eight test pits were advanced within the area east of the firing range berm, each was advanced to a total depth of 6 feet bgs. VERTEX collected one sample from each test pit, across the 2 to 4 feet bgs depth interval (samples V-301 through V-308). The remaining three test pits were excavated through the berm to depths of 2 feet into the underlying native soil (e.g., 2 feet below the base of the berm), with one soil sample collected from each test pit from the underlying native soil across the 2 to 4 feet bgs depth interval (samples V-309 through V-311). Using a hand auger, VERTEX advanced three soil borings to a total depth of 4 feet bgs in the western edge of the firing range, beyond the firing range berm. VERTEX collected one soil sample from each boring across the 2 to 4 feet bgs depth interval (samples V-312 through V-314) and submitted the soil samples to Con-Test for analysis of antimony, copper, and lead by USEPA Method 6010.

Based on the laboratory analytical results, antimony, copper, and lead were not detected at concentrations exceeding the applicable MCP RCS-1 Reportable Concentrations in soil samples V-301 through V-314. However, total lead was detected at concentrations exceeding 100 mg/kg in samples V-310 and V-312, therefore those soil samples were analyzed for TCLP lead. TCLP lead was detected in soil sample V-310 at a concentration exceeding the RCRA regulatory threshold for classification as a characteristic hazardous waste. TCLP lead was detected at a concentration exceeding the laboratory detection limit in soil sample V-312, but not exceeding the RCRA regulatory threshold for classification as a characteristic hazardous waste.

On April 12, 2021, VERTEX oversaw the advancement of a test pit within the center of the berm to a depth of 4 feet bgs into the underlying native soil (e.g., 4 feet below the base of the berm) (directly below soil sample V-310). VERTEX collected one soil sample from the test pit (identified as sample V-402) across the 2 to 4 feet bgs depth interval and submitted the sample to Con-Test for total lead analysis. The analysis did not detect a total lead concentration exceeding the MCP

RCS-1 Reportable Concentration. Table 4B presents a summary of the firing range soil analytical results and Figure 5B shows the locations of the vertical delineation samples.

Firing Range Post-Stabilization Confirmation Sampling and Analysis (April to May 2021)

As described above, TCLP lead concentrations exceeding the RCRA threshold for classification of characteristic hazardous wastes was detected in the firing range soils up to a depth of 2 feet bgs. In April 2021 and as described in the March 30, 2021, RAM Status Report, VERTEX oversaw the stabilization of the soils with a 75% phosphoric acid solution (Phos-75) at a dose rate of 0.5% by volume. On April 12, 2021, following stabilization, six 5-point composite confirmatory samples (samples "#1 Firing Range" to "#6 Firing Range") were collected. The samples corresponded to a frequency of approximately 1 sample per 100 tons of stabilized soil. Sample were collected in laboratory-supplied sample containers, stored on ice, and transferred under chain of custody to Con-Test for TCLP extraction and lead analysis. The results of the post-stabilization confirmatory soil sample analyses indicated that stabilization successfully reduced TCLP lead concentrations to less than 5 mg/L.

On May 4, 2021, based on a revised total volume of soil, five additional post-stabilization confirmatory samples, identified as "#7 Firing Range" through "#11 Firing Range," were collected, as composite samples like the above samples, from the stabilized soil. Post-stabilization samples were collected in laboratory-supplied sample containers, stored on ice, and transferred under chain of custody to ESS Laboratory (ESS) of Cranston, Rhode Island for TCLP lead analysis. The results of the post-stabilization confirmatory soil sample analyses indicated that stabilization successfully reduced TCLP lead concentrations to less than 5 mg/L.

On May 14, 2021, as described in the April 19, 2022, RAM Completion Report, VERTEX oversaw the stabilization of additional soils with a 75% phosphoric acid solution (Phos-75) at a dose rate of 0.5% by volume. Following stabilization, one 5-point composite confirmatory sample, identified as #1 Firing Range (this sample can be differentiated from the post-stabilization sample

with the same name mentioned above based on the collection date), was collected to confirm the stabilization of up to 100 tons of soil. After sampling, the stabilized soil was covered with polyethylene sheeting. Post-stabilization samples were collected in laboratory-supplied sample containers, stored on ice, and transferred under chain of custody to ESS for TCLP lead analysis.

Based on the analytical results of the post-stabilization confirmatory soil samples, stabilization successfully reduced TCLP lead concentrations to less than 5 mg/L prior to the transport of the soil off-site for disposal.

Figure 5C shows the firing range area and sample grid cells and Table 4C presents a summary of the analytical results for the post-stabilization confirmatory samples. Additional details are provided in the April 19, 2022, RAM Completion Report.

Firing Range Horizontal Metals Impact Delineation (May 2021)

On May 4, 2021, VERTEX collected ten sidewall composite soil samples within the firing range to assess the horizontal extent of elevated metal concentrations associated with the firing range (as described in the April 19, 2022, RAM Completion Report). The samples were identified as:

- V-401-FR-CONF-W
- V-402-FR-CONF-W
- V-403-FR-CONF-W
- V-404-FR-CONF-N
- V-405-FR-CONF-N
- V-406-FR-CONF-N
- V-407-FR-CONF-E
- V-408-FR-CONF-S
- V-409-FR-CONF-S
- V-410-FR-CONF-S

The composite samples were placed into laboratory-supplied sample containers, stored on ice, and transferred under chain of custody documentation to Con-Test for analysis of antimony, copper and/or lead by USEPA Method 6010.

Based on the analytical results (summarized in Table 4D), total lead was detected in soil samples V-401-FR-CONF-W and V-402-FR-CONF-W, at concentrations exceeding the MCP RCS-1

Reportable Concentration of 200 mg/kg. Total lead was detected in sample V-401-FR-CONF-W at 14,000 mg/kg, indicating the horizontal extent of the firing range release had not yet been delineated on the southwestern side of the firing range. Total lead was detected in sample V-402-FR-CONF-W at a concentration of 310 mg/kg, which, when considered with the post-remediation concentrations across the firing range will be shown to pose no significant risk as defined by the MCP. Total lead was not detected in the remaining eight soil samples at concentrations exceeding the MCP RCS-1 Reportable Concentrations.

Due to the total lead concentrations detected in soil samples V-401-FR-CONF-W, additional soil samples were collected and analyzed to further delineate the extent of lead in soil at the southwestern corner of the firing range area. On May 10 VERTEX collected six additional horizontal delineation soil samples (as described in the April 19, 2022, RAM Completion Report). Four soil samples, identified as V-501-FR-N, V-502-FR-W, V-503-FR-S, and V-505-FR-W, were submitted for laboratory analysis of total lead, of which two samples were also analyzed for total antimony and total copper. The remaining samples collected on May 10, 2021, were placed on hold pending the results of the four samples.

On May 14, 2021, as a proactive measure, excavation and stabilization activities began (see Section 4.1.2) prior to the receipt of the laboratory analysis results for the samples collected on May 10, 2021. To confirm that the May 14, 2021, excavation had successfully removed the soil containing elevated total lead concentrations, VERTEX collected an additional two horizontal confirmatory samples, V501-FR-CONF-N, V502-FR-CONF-S, from the limits of the new excavation, as described in the April 19, 2022, RAM Completion Report. The samples were placed into laboratory-supplied sample containers, stored on ice, and transferred under chain of custody documentation to Con-Test for analysis of antimony, copper and/or lead by USEPA Method 6010.

As summarized in Table 4D, antimony, copper, and/or lead were not detected in the soil samples at concentrations exceeding the MCP RCS-1 Reportable Concentrations, indicating that the

extent of impacts in the firing range had been excavated on the southwestern side of the firing range. Figure 5C shows the horizontal delineation soil samples.

Firing Range Additional Characterization Stockpile Sampling and Analysis (May 14, 2021)

On May 14, 2021, VERTEX collected and analyzed additional soil characterization samples, identified as V-401-DISP-FR and V-402-DISP-FR, from stockpiles located in the firing range area to meet the testing requirements of the soil receiving facilities. Each sample was collected as a 5-point composite sample. The samples were collected into laboratory-supplied sample containers, stored on ice, and transferred under chain of custody documentation to Con-Test for analysis to characterize the soil for off-site disposal.

Laboratory analytical results detected total lead concentrations in soil sample V-401-DISP-FR exceeding the MCP RCS-1 Reportable Concentrations. No other target analytes were detected in the soil samples at concentrations exceeding the MCP RCS-1 Reportable Concentrations.

The soil characterized by analysis of the samples collected the firing range and summarized in Table 4E, were accepted by Waste Management for disposal at the TREE landfill in Rochester, New Hampshire under BOL (eDEP transaction number 1275882).

Additional details are provided in the April 19, 2022, RAM Completion Report.

3.1.5 Pre- and Post-Stabilization Groundwater Investigation (2021)

In March 2021, VERTEX oversaw the installation of two monitoring wells for use in monitoring groundwater before and after stabilization of soils within the former firing range and in the 32,000 cubic-yard stockpile. As described in RAM Status Reports, the soils were stabilized with a Phos-70 (70% phosphorous acid solution) to render potentially leachable lead non-hazardous. The two wells (V-201(MW) and V-202(MW)) were installed to depths of 20 feet bgs adjacent to the northerly abutting wetlands, between the wetlands and the 32,000 cubic-yard stockpile and

the former firing range, respectively. Additional details are provided in the April 19, 2022, RAM Completion Report.

In March 2021, prior to soil stabilization activities, and in April and May 2021, following each soil stabilization activity, monitoring wells V-201(MW), V-202(MW), and monitoring well V-106 (MW) (installed during VERTEX's 2019 investigation) were gauged and sampled. During each of the three events, VERTEX gauged the depth to groundwater using a water-level indicator probe. Following gauging, groundwater samples were collected from the three monitoring wells in general accordance with USEPA low-flow sampling techniques. Following stabilization, groundwater samples were collected in laboratory-supplied pre-cleaned containers, stored on ice, and transferred under chain of custody to Con-Test for laboratory analysis of dissolved antimony, copper, and lead, total phosphorus, and pH. The May 2021 groundwater samples were also submitted for analysis of dissolved nickel[1].

Evidence of groundwater impacts from the soil stabilization was not observed based on the results of the pre- and post-stabilization groundwater monitoring analysis is summarized in Table 5.

3.1.6 Groundwater Investigation (September to November 2021)

Between September 30 and October 1, 2021, VERTEX oversaw the advancement of six soil borings completed with permanent monitoring wells. The monitoring wells were designated V-301(MW) through V-306(MW) and were screened across the water table at depths ranging from approximately 15 to 37 feet bgs.

On October 11 and October 12, 2021, VERTEX collected groundwater samples from eight groundwater monitoring wells [V-201(MW), V-202(MW), and V-301(MW) through V-306(MW)]

[1] The dissolved nickel analysis was an inadvertent inclusion in the sample analysis suite. Nickel was not a chemical of potential concern associated with the firing range.

and a duplicate sample from well V-304(MW). Following gauging, groundwater samples were collected from the monitoring wells in general accordance with USEPA low-flow sampling techniques. Following stabilization, groundwater samples from the eight wells were collected in laboratory supplied containers and transported under chain of custody to Con-Test for analysis.

On November 22, 2021, VERTEX collected an additional groundwater sample and duplicate groundwater sample from monitoring well V-201(MW) to confirm the initial results. The sample was collected using the USEPA low-flow sampling protocol, into laboratory supplied containers and transported under chain of custody to Con-Test for laboratory analysis of 14 per and polyfluoroalkyl substances.

Additional details are provided in the April 19, 2022, DPS Opinion.

4.0 NATURE AND EXTENT OF CONTAMINATION

4.1 Limit of Disposal Site

The Disposal Site boundaries associated with RTN 3-36013 were previously identified as the entire Property because of the presence of dissolved nickel and dissolved arsenic in groundwater across the Property; however, as detailed in the April 19, 2022 DPS Opinion, the groundwater impacts associated with RTN 3-36013 were determined to have migrated to the Property from the upgradient Sudbury landfill, therefore the Disposal Site boundary extends to the upgradient Sudbury Landfill to the west and north.

Based on the absence of dissolved arsenic and dissolved nickel at concentrations exceeding the MCP RCGW-1 Reportable Concentrations in groundwater samples collected from monitoring wells installed along the downgradient edge of the Property (monitoring wells V-101 (MW), V-304 (MW), and V-305 (MW)), the Disposal Site boundary associated with RTN 3-36013 does not extend to properties downgradient of the Property.

The PSNC Area applicable to this PSNC Statement is located at the areas of the former firing range and soil stockpile in the northwest and eastern portions of the Property, respectively, as shown in Figure 2.

5.0 ELIMINATION OR CONTROL OF SOURCES OF OHM IN THE ENVIRONMENT

The soil formerly stockpiled by the Town of Wayland in the eastern portion of the Property and the OHM detected in that soil originated from Wayland DPW project locations throughout the Town of Wayland. The source of metals detected in soil in the northwestern portion of the Property is the former firing range used by the Wayland Police Department from the mid-1970s until 2017.

The Town of Wayland sold the Property to Alta and the Property is no longer used to stockpile DPW materials or as a firing range. The stockpiled soil and firing range soils containing elevated concentrations of metals were removed from the Property; therefore, the release has been eliminated and there are no on-going or uncontrolled releases of OHM to the environment at the Property.

6.0 REPRESENTATIVENESS EVALUATION & DATA USABILITY ASSESSMENT

Information relevant to the PSNC Area and analytical data used during the performance of the Risk Assessment were evaluated in accordance with the provisions contained in MCP section 40.1056. In addition, the methods contained in the MassDEP policy WSC-07-350 "MCP Representativeness Evaluation and Data Usability Assessment," dated September 9, 2007, were used in evaluating the usability and representativeness of information and analytical data that pertain to the PSNC Area.

Included in the above referenced MassDEP policy are requirements to evaluate the following to assess whether the PSNC Area data support the conclusions of the Permanent Solution:

- PSNC Area history and usage, to assess the appropriateness of sampling locations and the analytical program;
- Field observations and screening, to assess the appropriateness of acquisition and usage of field screening data;
- Sampling locations, to assess the sufficiency of the OHM nature and extent evaluation;
- Sample collection and preservation procedures, to assess the accuracy of the analytical program;
- Use of appropriate laboratory testing procedures and methods, to assess the appropriateness of the analytical program; and
- Potential uncertainties associated with identified data deficiencies, with respect to the overall accuracy, precision, and sensitivity of the analytical data and compliance with the Presumptive Certainty provisions.

VERTEX evaluated each of the above as part of the Representativeness Evaluation and Data Usability Assessment (REDUA). The following is a summary of the REDUA for the dataset used in the Risk Assessment.

6.1 Conceptual Site Model (CSM)

The Conceptual Site Model (CSM) for the PSNC Area presents VERTEX's understanding regarding the OHM release source, mechanisms of release, nature and extent of OHM in impacted media, migration and exposure pathways, and release receptors. The sources of the OHM releases to the environment associated with the PSNC Area were stockpiled soil and a firing range, as depicted on Figure 2. The types of OHM found in soils excavated during public work projects depends on the source area from where it was excavated. In a town such as Wayland, which has residential, industrial, commercial, and agricultural land uses, numerous types of OHM could potentially be detectable in soil. The broad-spectrum soil characterization analyses identified PAHs and petroleum constituents (and asbestos which was addressed in the PSNC submitted for RTN 3-34474) as the OHM of concern in the stockpiled soil. Types of OHM commonly associated with former non-military firing ranges are more limited and are lead, antimony, and copper.

As depicted on Figure 2, the area to which RTN 3-36013 applies includes the entirety of the Property due to the detection of OHM in groundwater at concentrations exceeding MCP RCGW-1 Reportable Concentrations outside the PSNC Area. The groundwater conditions were addressed under a DPS Opinion submitted to the MassDEP on April 19, 2022 (as described further in Section 6.1.2) and this PSNC is applicable to the portion of the disposal site not included in the DPS Opinion (yellow line on Figure 2).

6.1.1 Extent of OHM-Impacted Soils

OHM in soil at the Property at concentrations exceeding MCP Reportable Concentrations was detected in the 32,000 cubic-yard stockpile and former firing range area. The extent of OHM was the 32,000 cubic-yard stockpile and the limits of the former firing range (i.e., the locations where guns were fired extending to the berm into which the bullets entered) to a depth of approximately 2 feet bgs. Post-excavation confirmatory sampling and analysis determined the OHM in the stockpiled soil did not extend into the underlying soils (see Section 3.1.2). Collection

and analysis of delineations samples identified the horizontal and vertical extent of metal impacts at the former firing range, as detailed in Section 3.1.4. Cessation of the land uses that created the stockpile and firing range source of the OHM releases and RAM remediation of those sources effectively eliminated the OHM hazards associated with them and eliminated the threat of further OHM release to the environment.

The current extent of OHM in soil at concentrations exceeding MCP Reportable Concentrations in the PSNC Area is limited to 310 mg/kg total lead in sample V-402-FR-CONF-W from in the western portion of the Property. This sample location is beneath approximately 5 feet of clean fill and concrete pavement. Soil with OHM exceeding MCP Reportable Concentrations are no longer present at the Property.

6.1.2 Extent of OHM in Groundwater

Dissolved metals at concentrations above MCP RCGW-1 Reportable Concentrations were identified in groundwater at the Property and are associated with RTN 3-36013; however, as demonstrated in the DPS Opinion submitted to MassDEP on April 19, 2022, the dissolved metals migrated to the Property from an upgradient source.

PFAS at concentrations above MCP RCGW-1 Reportable Concentrations were identified in groundwater at the Property and are associated with RTN 3-37278; however, as demonstrated in the DPS Opinion submitted to the MassDEP on April 19, 2022, the PFAS migrated to the Property from an upgradient source.

Based on the submittal of a DPS Opinion, this PSNC Statement does not address groundwater impacts.

6.1.3 Fate & Transport Characteristics of OHM

Summaries of the fate and transport characteristics for each of the OHM detected within the PSNC Area at concentrations exceeding MCP RCS-1 Reportable Concentrations are provided below.

PAHs – PAHs are a group of more than 100 chemicals and commonly occur in the environment as a result of incomplete burning of coal, oil, gas, wood, garbage, or other organic substances. PAHs at the PSNC Area originated from fill generated during DPW projects throughout the Town of Wayland. According to the Agency for Toxic Substances and Disease Registry (ATSDR), PAHs degrade in water via photo-oxidation, chemical oxidation, and biodegradation by aquatic microorganisms, and PAHs degrade in soil primarily by biodegradation. Based on their high partition coefficients, PAHs tend to adsorb to soil with high organic content. Most PAHs, including benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and phenanthrene have Henry's Law constants less than 1×10^{-4} atm-m^3/mol and have low to negligible volatility. Phenanthrene has low solubility in water but is more soluble than other PAHs and is therefore more likely to be detected in groundwater. Benzo(a)pyrene, benzo(b)fluoranthene, and dibenzo(a,h)anthracene have negligible solubility in water. PAHs can accumulate in terrestrial and aquatic plants, fish, and invertebrates; however, many animals are able to metabolize and eliminate these compounds.

Antimony, Total – Antimony is naturally occurring and can be dispersed through the environment by numerous natural and anthropogenic processes. Antimony at the PSNC Area originated from antimony-containing bullets used at the firing range. According to the ATSDR, the downward movement of antimony from soil to groundwater leaching is very slow under most natural conditions. Antimony strongly adsorbs to soil and sediment and therefore is generally retained in the upper layers of soil and does not leach appreciably into the subsoil and groundwater. Antimony does not biodegrade, but antimony compounds may be transformed in the environment to other antimony compounds. Studies have shown antimony bioconcentration

and/or biomagnification is low; however, the ATSDR indicates that additional investigations of higher trophic levels are needed.

Copper, Total – Copper is naturally occurring and can be dispersed through the environment by numerous natural and anthropogenic processes. Copper at the PSNC Area originated from copper-jacketed bullets used at the firing range. The downward movement of copper from soil to groundwater leaching is limited due to the affinity of copper to organic material and sediments. Copper strongly adsorbs to soil and sediment and therefore is generally retained in the upper layers of soil and does not leach appreciably into the subsoil and groundwater. Copper does not biodegrade, but copper compounds may be transformed in the environment to other copper compounds. The potential for bioconcentration in plants and animals is low, and there is little evidence of biomagnification of copper in the food change.

Lead, Total – Lead is naturally occurring and can be dispersed throughout and concentrated in the environment by numerous natural and anthropogenic processes. Anthropogenic lead at the PSNC Area originated from lead bullets used at the firing range and from lead-containing soil brought from off-site locations to the to the PSNC Area. According to the ATSDR, the downward movement of lead from soil to groundwater leaching is low under most natural conditions. The solubility of lead compounds in water is highest in soft, acidic water. Lead strongly adsorbs to soil and sediment and therefore is generally retained in the upper layers of soil and does not leach appreciably into the subsoil and groundwater. Lead does not biodegrade but lead compounds may be transformed in the environment to other lead compounds. Plants and animals may bioconcentrate lead, but lead is not biomagnified in the aquatic or terrestrial food chain.

6.1.4 OHM Migration Pathways

Potential mechanisms for migration of OHM in soil are erosion and transport by stormwater, as fugitive dust, and by leaching to groundwater. Analysis of soil at the Property in areas outside the PSNC areas and of groundwater has not identified significant migration of OHM from soil at the

Property. Significant migration of the OHM in soil would not be expected because of the generally low solubility and high organic carbon partitioning coefficients of the OHM. The soil stockpiling and firing range operations have ceased, the releases have been remediated, and new sources of MCP-reportable OHM releases at the Property are not known. Fugitive dust during RAM activities was monitored and was not significant. All of the soil containing OHM concentrations exceeding RCS-1 Reportable Concentrations was removed from the Property, except for 310 mg/kg total lead in sample V-402-FR-CONF-W collected from soil that is beneath clean fill and pavement.

6.1.5 Potential Routes of Exposure and Potential Receptors

The Property is being redeveloped with multi-family residential buildings. Current and future use of the Property is anticipated to be consistent with uses typical of a residential building and its surrounding landscaped and hardscaped (paved) areas. The remaining impacted soil is considered "potentially accessible" as defined by the MCP, (i.e., located from 3 feet bgs to 15 feet bgs). Therefore, potential routes of human exposure to OHM would exist via direct dermal contact, incidental ingestion, and inhalation of airborne dust if the cover materials are disturbed.

Hypothetical current and future receptors include residents, construction and/or utility workers, adult and child visitors, occasional trespassers (including children), workers in adjacent/nearby commercial properties, nearby residents, and the general public as passers-by outside the limits of the Property.

Volatile compounds were not detected in soil samples collected at the Property at concentrations exceeding the MCP RCS-1 Reportable Concentrations. Therefore, it can be reasonably concluded that the vapor intrusion pathway is not of concern under current or reasonably anticipated future Property conditions and uses.

6.2 Evaluation of Field Data

6.2.1 Field Screening

During soil boring advancement and soil sample collection, VERTEX visually and olfactory assessed the sampled soils for the presence of OHM. VERTEX screened the vapor headspace of soil samples using the MassDEP jar-headspace method and a PID with a 10.6 electron-volt (eV) lamp calibrated to a 100 ppmv isobutylene gas standard to evaluate the relative concentrations of TVOCs reported as isobutylene equivalents in samples of soil. Visual and olfactory evidence of impacts and TVOC measurements were used to evaluate the extent and magnitude of impacts and to assist in the selection of soil samples for analysis. It was assumed that samples that exhibited the most visual and olfactory evidence of impacts and highest PID measurements represented a "worst case scenario" and were typically selected for analysis. PID results are provided on the boring logs included in Appendix C.

During initial investigation activities, VERTEX screened soil at the firing range for total lead content using a handheld XRF analyzer. VERTEX used the XRF readings to estimate the area of elevated metal concentrations at the firing range. VERTEX performed a basic correlation analysis between the XRF screening values and lead analytical results collected. Based on the basic correlation analysis, a statistically significant linear relationship existed between the lead screening values and laboratory analytical data.

Groundwater samples collected by VERTEX were collected in general accordance with the USEPA low-flow sampling protocol (EQASOP-GW 001, January 2010). Groundwater was pumped from the monitoring well through a flow-through cell in which water quality parameters were measured, including pH, temperature, dissolved oxygen, specific conductivity, and oxygen reduction potential. After passing through the flow-through cell, the turbidity of the groundwater was evaluated using either an internal or a separate turbidity meter. After values of field-

measurement parameters stabilized, as defined below, the flow-through cell was disconnected, and groundwater samples were collected for analysis.

- Temperature – 3%, if three temperature values are within 3% then the values were considered stabilized.
- pH – ± 0.1 unit, if three pH values are within ± 0.1 unit then the values were considered stabilized.
- Specific Conductance (SPC) – 3%, if three SPC values are within 3% then the values were considered stabilized.
- Dissolved Oxygen – 10% for values greater than 0.5 mg/L, if three dissolved oxygen values were less than 0.5 mg/L, the values were considered stabilized.
- Oxidation/ Reduction Potential (ORP) – ±10 millivolts, if three ORP values were within ± 10 millivolts then the values were considered stabilized.
- Turbidity – 10% for values greater than 5 NTU (nephelometric turbidity units); if three turbidity values were less than5 NTU, the values were considered stabilized.

Field screening data generally correlated with laboratory data. Laboratory analyses generally detected higher concentrations of petroleum OHM in soil samples collected at locations that also yielded higher PID measurements of TVOCs. Higher concentrations of other OHM, such as PAHs, and metals, were generally detected in samples that exhibited greater visual/olfactory evidence of impacts. As such the field screening data supports the conclusions of the Risk Characterization and this PSNC.

6.2.2 Field Procedures

Sample collection procedures conducted by VERTEX followed the applicable MassDEP sampling protocols and performance standard of care. Soil and groundwater samples were collected into laboratory-provided clean-certified and properly preserved containers in accordance with the applicable test methods and following the provisions contained in the MassDEP Quality

Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data in Support of Response Actions Conducted Under the MCP [WSC-10-320 Compendium of Quality Control Requirements and Performance Standards for Selected Analytical Protocols (CAM)]. VERTEX submitted the samples with chain-of-custody documentation, on ice in coolers, and by courier to Con-Test for laboratory analysis. When required for analysis of dissolved metals, groundwater samples were filtered in the field using 0.45-micron filters prior to sample preservation, and groundwater samples were collected using new and dedicated polyethylene tubing, silicone tubing, and a peristaltic pump. Hold times were not exceeded. Appropriate chain-of-custody records accompanied the samples.

Considering the environmental media of concern and the OHM, the field procedures followed during the environmental investigations at the Property are considered appropriate to support the conclusions of the Risk Characterization and this PSNC Statement.

6.3 Evaluation of Analytical Data

6.3.1 Sampling Rationale, Spatial Sampling, and Testing

The sampling conducted by VERTEX in 2019 as part of a Phase II LSI was planned qualitatively by evaluating environmental conditions and concerns identified in a Phase I ESA. Additionally, the 32,000 cubic-yard and 4,500 cubic-yard stockpile were sampled at a sample frequency required for a majority of disposal facilities in preparation for off-site transportation. Based on the results of the LSI and stockpile characterization, as described in Section 3.0, the soils at the Property were characterized. Additionally, based on the collection of post-remediation confirmation samples below the 32,000 cubic-yard stockpile, and horizontal and vertical delineation samples collected from the former firing range, Soils remaining at the Property post-RAM were properly characterized to evaluate the efficacy of the RAM, potential exposure to OHM, and to enable Risk Characterization in accordance with the MCP.

Based on the potential historical OHM sources and historical analytical data, samples collected at the Property were evaluated for petroleum hydrocarbons, VOCs, SVOCs, metals, PCBs, and PFAS. Only groundwater samples were analyzed for PFAS because the mechanism of concern for a potential PFAS release originating at the Property was identified as a release of liquid septage containing aqueous-phase PFAS to the former infiltration beds by the former Wayland-Sudbury Septage Treatment Facility. Interstate Technology Regulatory Council (ITRC) published values for PFAS organic carbon partitioning coefficient (K_{oc}) vary depending on the PFAS compound but range approximately from 0.7 to 6 milliliters per gram (mL/g) and would therefore be expected to adsorb to organic carbon in the soil approximately as readily as methyl tert-butyl ether (MtBE) and less readily than most common VOCs, except acetone. Therefore, analysis of the groundwater was considered an appropriate method to assess the potential for a release of PFAS to have occurred at the Property.

Spatial Distribution and Rationale for Soil Sampling

Sufficient data has been collected to evaluate soil conditions and are sufficient to support the conclusions of the Risk Characterization and this PSNC Statement based upon the nature of the release sources, the nature of the OHM, the extent of the release, and the frequency and distribution of soil samples collected. Soil samples were collected at the limits of the OHM releases to define the extent of OHM and to allow for the calculation of EPCs. Analysis of the nine samples collected of soil underlying the portions of the stockpile in which OHM was detected at concentrations exceeding MCP RCS-1 Reportable Concentrations are representative of the soil remaining below the former 32,000 cubic-yard stockpile location. Analysis of the 24 vertical and horizontal delineation samples at the former firing range are representative of soil remaining at the former firing range area. The samples representative of soil remaining at the former firing range and at the former location of the 32,000 cubic-yard stockpile are shown on Table 6.

Spatial Distribution and Rationale for Groundwater Sampling

As summarized in Sections 3.1.1, 3.1.5, and 3.1.6, between 2019 and 2021 groundwater samples were collected from 15 monitoring wells installed at the Property. Well locations were selected to provide data at locations of potential OHM release to groundwater, at hydraulically upgradient portions of the Property to assess for potential on-site migration of OHM in groundwater from off-site sources, and at hydraulically downgradient locations to assess the downgradient extent of OHM in groundwater. Groundwater samples were collected from shallow wells because of the proximity of potential OHM sources that were being assessed, because sources of dense non-aqueous phase liquids (DNAPL) release to the Property were not identified or suspected, and because no exposure pathway to deeper groundwater was identified. OHM detected in groundwater has been demonstrated to have migrated to the Property from an upgradient off-site source, as detailed in the DPS Opinion. As such, this PSNC Statement does not address OHM in groundwater.

6.3.2 Temporal Distribution of Samples

The temporal evaluation is focused on groundwater conditions at the Property. Groundwater is evaluated temporally because groundwater conditions may change over time due to groundwater flow and other time dependent OHM transport mechanisms such as advection and dispersion, and because groundwater elevations typically fluctuate seasonally in response to variations in precipitation and rates of recharge. OHM concentrations in groundwater may also fluctuate based upon source removal and natural attenuation.

Groundwater samples were collected and analyzed in 2019, 2020, and 2021. The results of the groundwater sample analysis remained generally consistent temporally. Groundwater elevations varied approximately +/- 1 foot in the same wells and in wells located in the same general areas during this groundwater sampling. Significant temporal variations in OHM concentrations in groundwater that would suggest an on-site source of OHM in groundwater were not identified.

A summary of groundwater analytical data is provided on Table 5, and laboratory analytical reports are provided in Appendix D. The temporal distribution of groundwater sample collection and analysis is considered sufficient to support the conclusions of the Risk Characterization and this PSNC Statement.

6.3.3 Completeness

Critical samples are those samples that are required to meet the specific objectives of the MCP response actions. These may include the collection of drinking water samples from private or public water supplies. Private drinking water supply wells are not located at the Property or within 500 feet of the Property.

Soil samples and associated data that are considered critical for the Risk Characterization are the samples and analytical results representative of soil remaining in place following the RAM excavations, and samples and analytical results representative of native soils underlying the removed 32,000 cubic-yard stockpile.

Based upon the scope of the assessment and response actions, significant data gaps were not identified, and the data are sufficient to support the conclusions of the Risk Characterization and this PSNC Statement.

Critical parameters were those OHM identified at concentrations exceeding the MCP RCS-1 Reportable Concentrations. Field screening data was deemed to not be critical for this Risk Characterization and this PSNC Statement. The laboratory data packages were deemed complete for all samples submitted for laboratory analysis, and the analyses were deemed complete for all critical parameters. The suite of analytical parameters selected and reported were appropriate considering the Property history, and the frequency and location of sample collection was adequate to describe the magnitude and areal extent of the OHM releases.

Data Inconsistency, Uncertainty, and Non-Representative Samples

Significantly inconsistent data and sources of uncertainty were not identified in the soil analytical data representative of the soil remaining in place. Non-representative samples were not identified in the dataset. Based on this evaluation, all data were consistent to support the conclusions of the Risk Characterization and this PSNC Statement.

6.4 Data Useability Assessment

The Data Useability Assessment summarizes the precision, accuracy, representativeness, completeness, and comparability (PARCCS) parameters as they apply to data usability. Both laboratory and field data are included in the evaluation. Pre-CAM or Non-CAM data were not used to support the Risk Assessment. An evaluation of field screening data and field procedures was presented in Section 6.2 and was conducted in accordance with "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data in Support of Response Actions Conducted Under the MCP" (WSC-CAM VIIA) dated July 1, 2010, to confirm that sample integrity was maintained from the field to the laboratory. Only data used to support the Risk Assessment is evaluated herein for usability.

The laboratory analytical reports document the use of methods that are in accordance with applicable testing requirements. The laboratory reports contain a narrative that indicates compliance with the Presumptive Certainty status requirements contained in the MassDEP policy WSC-CAM. Affirmative responses to Presumptive Certainty Status Questions A through F were indicated in the laboratory reports used to support the Risk Assessment. Affirmative responses to Questions G and H were also indicated in the laboratory reports. Negative responses to Question I were indicated on the laboratory reports because the full target analyte list was not included in the laboratory report. Soil samples were analyzed for only total antimony, copper, and lead as part of delineation sampling associated with remediation of the firing range. The negative responses have not affected the overall quality or representativeness of the

laboratory reports and thus the data were considered usable under the MassDEP's Presumptive Certainty policy.

VERTEX evaluated laboratory data to confirm that the integrity of each sample was maintained. Specifically, VERTEX evaluated sample containers and preservation and holding times. VERTEX concluded that sample containers and preservation methods were sufficient for the laboratory methods utilized and holding times were not exceeded.

Based on the above, VERTEX concludes that the information and laboratory data used in the Risk Assessment and in support of this Permanent Solution are representative of the existing conditions. Thus, the requirements contained in MCP section 40.1056 have been met.

6.4.1 Precision

Precision is "a measure of mutual agreement among individual measurements of the same property, usually under prescribed similar conditions expressed generally in terms of the standard deviation."[2] Precision can be evaluated qualitatively by comparing the variability of sample data, and quantitatively by comparing the reproducibility of duplicates.

Soil sample duplicates were not collected from the remaining soil. However, precision was qualitatively assessed by comparing the types of analytes and the relative magnitude of OHM concentrations detected in post-remediation firing range samples. Copper and lead were detected in each post-remediation firing range soil sample analyzed. Antimony was detected in only one post-remediation firing range soil sample at a concentration within an order of magnitude of the laboratory reporting limit (RL). Additionally, the relative magnitude of

[2] Definition obtained from the MassDEP Glossary of Quality Assurance Terminology located at the following web address: http://www.mass.gov/eea/agencies/massdep/cleanup/regulations/glossary-of-quality-assurance-terminology.html

concentrations detected across the post-remediation firing range soil samples were comparable and within an order of magnitude.

As an evaluation of field precision, the soil field sampling procedures were appropriate for the intended data use and the laboratory analyses requested, as detailed in Section 6.2.2. Based on the above evaluation, the precision of the data is deemed sufficient to support the Permanent Solution.

6.4.2 Accuracy

Accuracy is "a measure of the closeness of an individual measurement or the average of a number of measurements to the true value. Accuracy includes a combination of random error (precision) and systematic error (bias) components that are due to sampling and analytical operations…"[3] To evaluate laboratory accuracy, an evaluation of the laboratory quality control procedures was conducted. The review of the laboratory control procedures included a review of the laboratory control samples (LCS), LCS duplicate (LCSD) samples, surrogate recoveries, dilutions, method calibrations, and laboratory method blanks.

No non-conformances to laboratory quality control were identified. Analytes were reported with laboratory RLs that achieved the CAM RLs. LCS, LCSD, and method blanks indicated that the laboratory analytical controls were within the acceptable values. As such, the soil analytical data is considered to accurately represent the soil conditions.

6.4.3 Representativeness

Representativeness is "a measure of the degree to which data accurately and precisely represent a characteristic of a population, a parameter variation at a sampling point, a process condition,

[3] Definition obtained from the MassDEP Glossary of Quality Assurance Terminology located at the following web address http://www.mass.gov/eea/agencies/massdep/cleanup/regulations/glossary-of-quality-assurance-terminology.html

or an environmental condition.[4] Representativeness was assessed qualitatively to evaluate observed conditions. Soil samples were collected to evaluate locations where the release was suspected to have occurred and of the extent of the release predicted by the CSM. Field observations (e.g., the presence or lack of visual evidence of bullet remnants) were consistent within the suspected release area both in location and magnitude. Field data was collected to evaluate release conditions and were confirmed using laboratory data.

A sufficient number of samples were collected and analyzed to representatively evaluate the OHM release conditions. Firing range impacted soils were excavated, as detailed in Section 3.1.4. As such, OHM concentrations in post-remediation firing range soil after the excavation are considered representative of current and future conditions. Therefore, the data are representative and sufficient for use in the Permanent Solution.

6.4.4 Completeness

Completeness is "a measure of the amount of valid data obtained from a measurement system compared to the amount that was expected to be obtained under correct, normal conditions."[5] Invalid data were not identified during the sample collection process. The quantity of samples and the analytical program are sufficient to support the conclusions of the Risk Characterization and this PSNC Statement.

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[4] Definition obtained from the MassDEP Glossary of Quality Assurance Terminology located at the following web address http://www.mass.gov/eea/agencies/massdep/cleanup/regulations/glossary-of-quality-assurance-terminology.html

[5] Definition obtained from the MassDEP Glossary of Quality Assurance Terminology located at the following web address http://www.mass.gov/eea/agencies/massdep/cleanup/regulations/glossary-of-quality-assurance-terminology.html

6.4.5 Comparability

Comparability is a measure of the confidence with which one data set or method can be compared to another. A qualitative evaluation of comparability was conducted based on a review of sampling and analytical methods. Based upon the reported release, soil samples were collected for analysis of antimony, copper, and lead (for the firing range) and for PAHs and lead (for the 32,000 cubic-yard stockpile). The detection of similar OHM in the soil samples indicates that the samples were collected from the same release, and the OHM detected are consistent with the land use history. Furthermore, the sample data showed similar concentrations by location with a decrease in concentration the farther away the samples were from the firing range. Additionally, the analytical methods used for the subsurface investigations completed between 2017 and 2021 were consistent. Therefore, the comparability between soil sample sets was sufficient to support the conclusions of the Risk Characterization and this PSNC Statement.

6.4.6 Sensitivity

Sensitivity is the capability of a method or instrument to discriminate between measurement responses representing different levels of a variable of interest. VERTEX evaluated sensitivity via dilution factors and laboratory procedures.

No elevated laboratory RLs exceeding CAM RLs were indicated. A review of the data indicates that the RLs were increased proportional to the required dilution in one laboratory report, which is consistent with standard laboratory practices and CAM. However, the required dilution did not elevate the RL greater than the CAM-required RL. Therefore, the overall sensitivity of the analysis was not impacted and does not affect the conclusion of the Permanent Solution.

As such, the sensitivity of the analytical methods used is satisfactory for this Permanent Solution and Risk Assessment.

6.5 Conclusion from Representatives Evaluation and Data Usability Assessment

Based upon a review of the data, an evaluation of the data quality control, and the sampling methods, the data selected for use in the conclusions of the Risk Characterization presented in Section 7.0 and this PSNC statement is scientifically valid and defensible; of sufficient accuracy, precision and completeness; and representative with regards to the spatial and temporal distribution of sampling points.

7.0 METHOD 2 RISK CHARACTERIZATION

MCP section 40.0900 contains provisions for characterizing the risk of harm to human health, public safety and welfare, and the environment posed by the detected concentrations of OHM in tested samples of soil and groundwater (or other environmental media) at any MCP site. Specifically, the MCP identifies three risk characterization methods referred to as Method 1, Method 2, and Method 3 that may be conducted at an MCP site subject to relevant MCP provisions for the selection and use of any one or more risk characterization methods, singularly or in combination.

OHM detected in soil at the PSNC Area are due to storage of excess materials by the Wayland DPW and use of the PSNC Area as a firing range by the Wayland Police Department. OHM have been detected in PSNC Area groundwater at concentrations exceeding MCP Reportable Concentrations; however, the presence of OHM (dissolved arsenic, dissolved nickel, and PFAS) are attributed to off-site hydraulically upgradient locations. On April 19, 2022, a DPS Opinion was submitted for the PSNC Area. The likely source of the detected chemicals in groundwater is the upgradient Sudbury Landfill in Sudbury, Massachusetts. Therefore, groundwater is not considered to be an impacted medium for this PSNC.

Based on the information summarized in previous sections of this PSNC, an MCP Method 2 Risk Characterization (RC) was selected and performed for the PSNC Area soil to characterize the risk of harm to the identified human and potential ecological receptors. An MCP Method 2 RC was selected because promulgated standards listed in MCP section 40.0970, referred to as "MCP Method 1 Soil Standards", do not exist for all detected contaminants of potential concern (CoPCs) which are OHM detected at concentrations exceeding laboratory RLs and related to historical Property use; therefore, use of a Method 1 RC was not appropriate. Because one detected constituent, copper, does not have a promulgated standard in the MCP, a "Method 2 Soil Standard" was derived. Derivation of Method 2 Soil Standards (provided in Appendix E) requires the RC be referred to as a "Method 2" RC. VERTEX conducted a Method 2 RC for the PSNC Area

in accordance with the provisions contained in MCP sections 40.0970 and 40.0980 to demonstrate that concentrations of OHM in soil following response actions within the PSNC Area do not pose a Significant Risk to health, safety, public welfare, or the environment for current and future uses of the PSNC Area. This Method 2 RC identifies CoPCs among the OHM detected at the PSNC Area and directly compares the EPC of each identified CoPC in soil to MCP Method 1 or derived Method 2 standards.

A Method 2 RC is also applicable to the PSNC Area because OHM impacts are limited to soil, and potentially bioaccumulating compounds and elements are not present in the top 2 feet of PSNC Area surface soil.

The Method 2 RC evaluates the risk of harm utilizing the MCP Method 1 S-1 soil cleanup standards and derived Method 2 S-1 soil cleanup standards applicable in areas where groundwater is categorized as GW-1, GW-2, and GW-3. The S-1 category is selected as the MCP soil category that is currently applicable to the PSNC Area because the PSNC Area is being redeveloped as a multi-family residential apartment complex.

The Method 2 RC conclusions support the PSNC Statement. In accordance with MCP sections 40.1040(1) and 40.1041(1), a PSNC shall apply to areas where the following are true:

- disposal sites or portions of a disposal site where the requirements of MCP section 40.1040(1) have been achieved;

- disposal sites or portions of a disposal site where OHM concentrations do not exceed an applicable Upper Concentration Limit (UCL) in Soil or Groundwater listed at MCP section 40.0996(6), unless such levels are consistent with Natural Background;

- sites where response actions have eliminated threats of release and no release of OHM to the environment has occurred; and

- a level of No Significant Risk exists and will be maintained for current and foreseeable future uses of the PSNC Area without relying on the following:

    1. assumed limitations on future site activities or uses that require Activity and Use Limitation (AULs), as specified in MCP section 40.1012; or

    2. assumed limitations on current or future site activities, uses or conditions that do not require an AUL pursuant to MCP section 40.1013.

7.1 Applicable Groundwater and Soil Categories

7.1.1 Groundwater Classification

In accordance with the MCP, groundwater is categorized based upon its current and/or potential future use as drinking water (GW-1), its potential to act as a source of volatile compounds to indoor air (GW-2), and the potential to discharge to surface water (GW-3). In accordance with the criteria contained in MCP section 40.0932, groundwater at the PSNC Area is classified as GW-1. The PSNC Area is within an area mapped as medium and high yield aquifer that is considered a future potential drinking water resource area; therefore, groundwater category GW-1 is applicable to the PSNC Area.

Groundwater is categorized as GW-2 when it is located within 30 feet of an occupied building or structure and the average annual depth to groundwater in the area is 15 feet or less (MCP section 40.0932(6)). While occupied structures are not currently located on the PSNC Area, the PSNC Area is being developed with multi-family residential buildings; therefore, groundwater category GW-2 will be applicable to the PSNC Area in the future.

In accordance with the criteria in MCP section 40.0932(2), groundwater at all Disposal Sites shall be considered a potential source of discharge to surface water and is therefore categorized as

category GW-3. Therefore, groundwater at the PSNC Area is also classified as groundwater category GW-3.

7.1.2 Soil Classification

In accordance with MCP section 40.0933(9), soil at any Disposal Site may be categorized singularly as MCP Method 1 category S-1, S-2, or S-3 or as a combination of categories. The categorization of soil for use in a RC is based on accessibility, frequency of exposures to the soil, and potential intensity of such exposures. Soil category S-1 is applicable to locations where the soil is generally accessible, and exposure may involve children at high frequency and high intensity. Soil categories S-2 and S-3 are applicable to conditions where potential exposures are less frequent and/or intense, or the soil is less accessible.

Soil category S-1 standards are considered protective of unrestricted usage including, but not limited to, single family or multi-unit residences, gardening, and the growing of fruits and vegetables for human consumption. Application of the less stringent soil category S-2 and S-3 standards assume that human exposure to the soil is currently limited or restricted and that future activities and uses that could increase exposure will be restricted with an AUL.

Currently the PSNC Area is vacant and access to the Property is not restricted. As a result, trespassers could traverse the PSNC Area on a low frequency and low intensity basis. Under current conditions, MCP soil categories S-2/GW-1, S-2/GW-2 and S-2/GW-3 are applicable. Because the PSNC Area is planned to be redeveloped into multi-family residential apartments, MCP soil categories S-1/GW-1, S-1/GW-2 and S-1/GW-3 are applicable to the impacted soil present from 0 to 15 feet bgs under future conditions.

7.2 Method 2 Risk Characterization

This Method 2 RC includes a comparison of soil EPCs to promulgated and derived standards in the MCP. Comparison to the MCP Method 1 standards and derived Method 2 standards evaluates

the risk of harm to human health, environment, and public welfare and assesses whether a condition of No Significant Risk exists or has been achieved at the PSNC Area. As part of a Method 2 RC, an evaluation of the risk of harm to safety has also been included in Section 7.4. This RC is based on regulations specified in the MCP as well as other MassDEP and USEPA risk assessment guidance, including MassDEP's Guidance for Disposal Site Risk Characterization, dated 1995.

RC calculations used the entirety of the analytical data set available for remaining firing range soil within 15 feet of the ground surface in the PSNC Area at final planned grade, as presented on Table 6. EPCs in impacted soil representative of the 0 to 15 feet bgs depth range do not exceed the MCP Method 1 and Method 2 standards. No soil samples collected within the PSNC Area contained concentrations of OHM exceeding UCLs. Based on the information described in this section and in more detail in the following sections, a condition of No Significant Risk to human health, public welfare, and the environment exists. In addition, the separate evaluation for safety provided in Section 7.5 indicates that a condition of No Significant Risk to safety has been achieved in the PSNC Area.

7.3 Human Health Risk Assessment

The human health risk assessment is presented below and consists of five main components: hazard identification, exposure assessment, dose-response information, risk characterization, and the uncertainty analysis.

7.3.1 Hazard Identification

The objective of the Hazard Identification is to identify among the OHM detected at the PSNC Area those OHM that are CoPCs for each medium of concern.

The soil CoPCs addressed in this Method 2 are OHM detected at concentrations exceeding laboratory RLs related to historical site use. Nature and extent of site-related impacts to soil is described in detail in Section 6.1.

OHM concentrations exceeding the applicable Reportable Concentrations at the time of sampling were detected in groundwater samples are attributed to an off-site hydraulically upgradient source, for which a DPS Opinion was submitted. Therefore, groundwater was not considered a media of concern for the PSNC Area and was not evaluated in this Method 2 RC.

OHM in indoor air was not evaluated because indoor air was ruled out as a medium of concern in accordance with MCP section 40.0942(1)(b)1. OHM in soil and groundwater are not considered volatile. As a result, in accordance with MCP section 40.0942(1)(d)1, the soil concentrations of OHM are not likely to migrate to indoor air. Therefore, vapor intrusion was ruled out as a complete pathway and indoor air is not a medium of concern.

7.3.2 Selection of Soil CoPCs

According to Section 2.4 of the Guidance for Disposal Site Risk Characterization (MassDEP 1995), all OHM at a site should be considered CoPCs unless one of the following conditions is true:

- The chemicals are present at a low frequency of detection and in low concentrations;
- The chemicals are present at levels that are consistent with "background" for the area and there is no evidence that their presence is related to activities at the site; or
- The chemicals are field or laboratory contaminants.

Based on the removal of the 32,000 cubic-yard stockpile as part of RAM Activities and on the results of confirmatory sample analyses, this area was remediated to background conditions and therefore was not considered as part of this Method 2 RC. Furthermore, the PAHs and lead detected above laboratory detection limits in the confirmatory samples (as summarized in Table

3C) were not detected above the MassDEP published background concentrations for natural soil and therefore are not considered as CoPCs.

Maximum detected concentrations of metals in firing range soil were compared to background concentrations published by the MassDEP (MassDEP 2002). No metals were excluded as CoPCs in soil in this Method 2 RC because the maximum detected concentrations exceeded the published Background Concentrations for Natural Soil. The CoPC selection process for the impacted soil from 0 to 15 feet bgs is provided on Table 7.

7.3.3 Data Management

Sample Depths

As a result of RAM activities and redevelopment plans, soil in the former firing range was removed to depths of 3 feet below original ground surface, except for soil represented by samples V501-FR-CONF-N, V502-FR-CONF-S, and V-505-FR-W located in a planned unpaved area to the west of the building and sidewalk. Therefore, no PSNC Area soil is present in the 0 to 3 foot bgs "accessible" depth range except for the soil represented by those three samples. The soil EPC data set for "accessible" soil is therefore based on the post-redevelopment depth and accessibility of the soil and are not based on the depth and conditions at the time of sampling. Therefore, PSNC Area soil sample data used in the Method 2 RC is representative of the impacted soil at depths from 0 to 15 feet bgs following redevelopment of the PSNC Area (soil sample data collected from soil removed during RAM activities were not included in the RC calculations). The depths of firing range samples remaining within the PSNC Area relative to post-development ground surface (i.e., corrected for the grade changes during PSNC Area development) are presented on Table 4.

Non-Detects (NDs)

General statistics for the impacted soil from 0 to 15 feet bgs were calculated and are presented on Table 7. Historically, it has been common practice in risk assessment to replace non-detects (NDs) with one-half of the RL. However, this Method 2 incorporates recommendations from more recent USEPA ProUCL Version 5.0.00 Technical Guide (2013) to instead use statistically superior parametric and nonparametric methods now available in its ProUCL software to compute upper bound concentrations of interest for data sets that include NDs.

7.3.4 Exposure Assessment and Exposure Point Concentrations (EPCs)

The objective of the Exposure Assessment is to estimate the type of potential exposure related to CoPCs present at the PSNC Area. Exposure is described based on the populations potentially exposed to contaminated media via specific exposure pathways, as determined by current and future potential land uses.

The PSNC Area is in a mostly industrial and commercial area of Wayland, Massachusetts. Review of readily available historical information indicated that the Property was historically bordered to the west by a gravel pit from at least the 1940s until the gravel pit was converted into a landfill in 1970. The landfill remained in operation until 1996 and was capped in 2005. In 2013 the landfill was developed with solar panels. Historically, the property has been bordered to the south by Boston Post Road since at least 1894. The area south of the property beyond Boston Post Road was used as an unlined landfill between 1958 and 1980. The landfill has since been capped, and that area is currently forested and undeveloped. The areas directly north and east of the property have remained undeveloped forested wetlands since at least 1894 until present. In 1980 the Wayland Transfer Station was established at the former Wayland Sand Hill Landfill, approximately 1,000 feet northwest of the Property and remains in operation. Future PSNC Area use will be for multi-family residential apartments.

Under future PSNC Area land use conditions, exposure to impacted soil is predominantly prevented by clean cover soil of various depths, hardscaping, and building foundation. Direct contact with CoPCs in soil is a complete exposure pathway for current and future human receptors because currently the PSNC Area is unpaved and a portion of the PSNC Area will remain unpaved in the future. Furthermore, under unrestricted use, it is assumed that a mixture of soil from 0 to 15 feet bgs could be brought to the surface and become "accessible." Therefore, potential exposure to soil from 0 to 15 feet bgs is considered a complete exposure pathway.

As indicated in Section 7.2, groundwater and indoor air are not environmental media of concern. As discussed in more detail in Section 7.4, a complete exposure pathway for environmental receptors has not been identified.

EPCs are defined in the MCP as the contaminant concentrations in each identified environmental medium with which human and/or ecological receptors may come in contact at the point of exposure. MCP section 40.0926 contains provisions for the estimation of the EPCs. EPCs are required by the MCP to be conservative estimates of the mean concentration of CoPCs contacted by individuals represented by each exposure scenario at the exposure point over the period of exposure. For chronic and subchronic exposures, the MCP specifies the following criteria in MCP section 40.0926(3)(b) that must be met for the arithmetic average of data to be acceptable as an EPC:

- The arithmetic average is less than or equal to the applicable standard or risk-based concentration limit;
- 75% of the data points used in the averaging procedure are equal to or less than the applicable standard or risk-based concentration limit; and
- No data point used in the averaging is ten times greater than the applicable standard or risk-based concentration limit.

The MCP requires evaluation of hot spots as separate exposure points. A hot spot is defined as a "discrete area where the concentrations of OHM are substantially higher than those concentrations in the surrounding area." Hot spots should be identified based on both CoPC concentrations and spatial distribution of CoPC impacts. When the CoPC concentration in a discrete area is more than one hundred times the concentration in the surrounding area, the discrete area is a hot spot that must be treated as a separate exposure point. Based on these parameters, no hot spots were identified.

Post-remediation firing range soil samples remaining in the PSNC Area at current depths of 0 to 4 feet bgs but which are representative of future depths of 0 to 15 feet bgs, were used to calculate EPCs. Therefore, the samples representative of soil from 0 to 15 feet bgs to evaluate unrestricted future use and included in the EPC are:

V-301 (2-4)	V-307 (2-4)	V-402-FR CONF-W	V-408-FR-CONF-S
V-302 (2-4)	V-308 (2-4)	V-403-FR-CONF-W	V-409-FR-CONF-S
V-303 (2-4)	V-309 (0-2)	V-404-FR-CONF-N	V-410-FR-CONF-S
V-304 (2-4)	V-313 (2-4)	V-405-FR-CONF-N	V501-FR-CONF-N
V-305 (2-4)	V-314 (2-4)	V-406-FR-CONF-N	V502-FR-CONF-S
V-306 (2-4)	V-402 (2-4)	V-407-FR-CONF-E	V-505-FR-W

The MCP requirements for use of the arithmetic average were met for the soil as provided on Table 8; therefore, the EPCs were set to the arithmetic mean concentrations. Table 8 summarizes the EPCs for soil. Supporting documentation for the summary statistics and EPCs is provided in Appendix E.

7.3.5 Dose-Response Information

Method 2 Soil Standards were developed for copper because Method 1 Soil Standards are not promulgated for this OHM. Derivation of the Method 2 Soil Standards is provided in Appendix I. Method 2 Soil Standards associated with carcinogenic exposures were not calculated because copper is not categorized as a Class A, B, or C carcinogen and therefore does not have a cancer

slope factor. Similarly, no inhalation toxicity values are available for copper. The leaching component for this compound was not considered, as shown in Appendix E, because Henry's Law Constant (H) or organic carbon partition coefficient (Koc) exists for copper and therefore the leaching pathway is considered improbable.

7.3.6 Risk Characterization

The Method 2 RC compares EPCs to promulgated MCP Method 1 standards and to the derived Method 2 standard for copper on Table 8. Standards applicable to the PSNC Area under current and future uses include S-2/GW-1, S-2/GW-2, and S-2/GW-3 soil standards for current trespassers and S-1/GW-1, S-1/GW-2, and S-1/GW-3 for future residents, the most stringent applicable standards. EPCs in soil do not exceed the Method 1 and Method 2 Standards. Detected CoPC concentrations in soil do not exceed their respective MCP UCLs, because UCLs are at least an order of magnitude higher than the most stringent Method 1 and Method 2 standards. UCLs are concentrations of OHM which, if exceeded, indicate a potential significant risk of harm to public welfare and the environment under future conditions. Therefore, a condition of No Significant Risk of harm to human health, public welfare, and the environment has been demonstrated.

7.3.7 Uncertainty Analysis

This RC is based on several assumptions, the majority of which are intended to be protective of human health. Site-specific uncertainties can include incomplete delineation of the PSNC Area or sample results that do not adequately reflect site conditions. Section 6.0 of the PSNC discusses the representativeness of the soil samples. Most assumptions incorporated into this RC were inherently conservative. Specifically, the Method 1 and Method 2 standards are derived to be protective of human health. The development of the Method 1 Standards includes several assumptions made by the MassDEP that generally represent conservative estimates based on

published information and thus only represent receptors at the PSNC Area in a general sense. This Method 2 RC assumed no land use or exposure restrictions.

Derivation of the Method 2 Soil Standards, which includes the use of dose-response values such as reference doses (RfDs), physical constants (solubility, odor thresholds), and assumptions about human and ecological receptor exposure, can contribute to uncertainty in the RC. Accordingly, the Method 1 and Method 2 Soil Standards and their application have the following uncertainties:

- the use of dose-response information from effects observed at high doses to predict the adverse health effects that may occur following exposure to the low levels expected from human contact with the compound in the environment;
- the use of dose-response information from short-term exposure studies to predict the effects of long-term exposures, and vice versa;
- the use of dose-response information from animal studies to predict adverse health effects in humans;
- the use of dose-response information from homogeneous animal populations or healthy human populations to predict the adverse health effects likely to be observed in the general population consisting of individuals with a wide range of sensitivities; and
- the use of default values for daily ingestion rates, average body weights, surface area, and permeability constants.

7.4 Risk of Harm to the Environment

Method 2 RCs must identify and describe the environmental receptors that are likely to be present at the Disposal Site or in the surrounding environment and which, as a result, would likely be exposed to OHM. No naturally occurring surface water bodies or wetland areas were observed on the property. The closest naturally occurring non-ephemeral surface water body is the

Sudbury River, located approximately 320 feet east of the PSNC Area. According to the National Wetlands Inventory (NWI) Wetlands Mapper maintained by the United States Fish and Wildlife Service (USFWS), the area between the PSNC Area and the Sudbury River consists of wetlands. An additional forested wetland is located northerly adjacent to the PSNC Area and in which surface water has been occasionally observed. Although wetlands are located directly abutting the PSNC Area to the north and east, the PSNC Area itself is the location of the former DPW storage yard and Town of Wayland firing range, now undergoing multi-family residential development, beyond which are located multiple landfills. The developed nature of the PSNC Area is not considered to represent a viable terrestrial habitat that would support Environmental Receptors.

According to the MassGIS MassMapper website, Areas of Critical Environmental Concern (ACEC), protected open space, or current or potential habitats of rare wildlife are not located in the PSNC Area. Rare wetland wildlife habitat is located within the mapped wetlands east of the PSNC Area. OHM concentrations detected in groundwater samples were demonstrated to have migrated to the PSNC Area from an upgradient off-site source and were addressed with a DPS Opinion. However, OHM concentrations in groundwater did not exceed GW-3 standards. No evidence of stressed biota, fish kills or other acute adverse impacts to freshwater fish, or abiotic conditions have been reported associated with the PSNC Area and are not expected because the dissolved arsenic, dissolved nickel, and PFAS6 do not exceed the GW-3 cleanup standards. Therefore, OHM concentrations in PSNC Area groundwater is not impacting nearby surface water that would result in exceedances of aquatic quality criteria.

Soil EPCs and OHM-containing soil in the current 0 to 3 feet "accessible" soil samples in the future unpaved portion of the PSNC Area do not exceed Method 1 or Method 2 S-1 Soil standards. Because S-1 standards are protective of human health, public welfare, and the environment and because no Environmental Receptors were identified in the PSNC Area, a Stage I Environmental Screening is not required. A condition of No Significant Risk to the environment exists for the PSNC Area.

7.5 Characterization of the Risk to Safety

The risk of harm to safety is evaluated by comparing site conditions to applicable or suitably analogous safety standards (MCP section 40.0960(2)). For the PSNC Area, no applicable or suitably analogous safety standards were identified.

MCP section 40.0960 identifies several additional criteria that need to be considered in the evaluation of safety, including:

- The presence of rusted or corroded drums or containers, open pits, lagoons, or other dangerous structures (310 CMR 40.0960(3)(a)). None of these features exists at the PSNC Area.
- The threat of fire or explosion (310 CMR 40.0960(3)(b)). Conditions were not identified that would pose such a threat.
- Uncontained material that exhibits the characteristics of corrosivity, reactivity, or flammability as described in 310 CMR 40.0347. These materials were not observed at the time of PSNC Area visits nor are they likely to be present, given the nature of the known or potential releases at the PSNC Area.

Based upon the above evaluation, a condition of No Significant Risk of harm to safety exists for the PSNC Area, as no threat of physical harm or bodily injury to people related to the CoPCs was observed within the PSNC Area or within the surrounding area (310 CMR 40.0960).

7.6 MCP Risk Definition and Results

Pursuant to the provisions contained in MCP section 40.0973(7), a condition of No Significant Risk of harm to human health, public welfare, safety, and the environment exists or has been achieved at any MCP site when no EPC of the identified CoPCs exceeds the applicable MCP Method 1 and Method 2 soil or groundwater standards and meets the requirements of a Method 2 RC.

As shown in Table 8, EPCs in soil do not exceed current and applicable MCP Method 1 and Method 2 S-1/GW-1, S-1/GW-2, and S-1/GW-3 soil standards and thus are also less than their respective MCP UCLs.

7.7 Conclusions

Based on the above, VERTEX has concluded that a condition of No Significant Risk of harm to human health, public welfare, safety, and the environment has been achieved within the PSNC Area for current activities and uses, and for unrestricted future residential use, and a Permanent Solution with No Conditions (PSNC) is achieved.

8.0 BACKGROUND FEASIBILITY EVALUATION

In accordance with MCP section 40.0442(3)(c) and the MassDEP policy on Conducting Feasibility Evaluations under the MassDEP Policy WSC-04-160, VERTEX evaluated the feasibility of achieving or approaching background conditions that would exist in the absence of the RTN 3-36013 OHM release within the Property.

During subsurface investigations completed by VERTEX, soil with OHM concentrations exceeding background levels were identified. During response actions associated with RTN 3-36013, detailed in Section 3.0, approximately 70,988 tons of soil were excavated and removed from the Property. Additionally, while lead was detected at concentrations exceeding the MCP Method 1 S-1 soil standard at one location within the former firing range, the EPC of lead was reduced to 50% of the NSR concentration, as demonstrated in Table 8. Therefore, concentrations of OHM in soil within the Property are approaching, or have been reduced, to background levels pursuant to relevant provisions contained in the MCP and in the July 2004 MassDEP Policy WSC-40-160 "Conducting Feasibility Evaluation Under the MCP."

9.0 PERMANENT SOLUTION WITH NO CONDITIONS STATEMENT

9.1 Summary

Based upon the provisions contained in MCP section 40.1041, a PSNC has been achieved at the Disposal Site for the release associated with RTN 3-36013. The following requirements contained in MCP section 40.1040(1) have been met:

a) Implementation of MCP response actions achieved a condition of No Significant Risk of harm to human health, public welfare, safety, and the environment for current and foreseeable future uses of the Disposal Site;

b) Sources of OHM have been eliminated;

c) Non-Aqueous Phase Liquid (NAPL) was not identified at the Disposal Site;

d) The level of OHM has been reduced to or approaching Background levels;

e) Threats of release have been eliminated; and

f) Impacts to groundwater identified under RTN 3-36013 were demonstrated to have migrated to the Property from an off-site upgradient source. On April 19, 2022, a DPS Opinion addressing the OHM in groundwater was submitted to the MassDEP under RTN 3-36013.

9.2 Certification and Attestation

The certification of the entity undertaking the response actions, and the attestation of the LSP, are contained on the MassDEP transmittal form submitted concurrent with this report. Pursuant to 310 CMR 40.0009, it is the opinion of the LSP that response actions have been conducted in accordance with applicable MassDEP regulations, and this Permanent Solution with No Conditions Statement meets the requirements in 310 CMR 40.1041(1).

10.0 NEED FOR ACTIVE EXPOSURE PATHWAY MITIGATION MEASURES

No Active Exposure Pathway Mitigation Measures are required in support of this Permanent Solution with No Conditions Statement.

11.0 NEED FOR POST-CLOSURE OPERATION, MAINTENANCE, AND/OR MONITORING

No post-closure operation, maintenance, or monitoring is required in support of this Permanent Solution with No Conditions Statement.

12.0 PUBLIC INVOLVEMENT AND LSP STATEMENT

Public involvement activities have been completed for the release listed under RTN 3-36013 as required by the provisions contained in MCP section 40.1400. Copies of the public notification documents are contained in Appendix E.

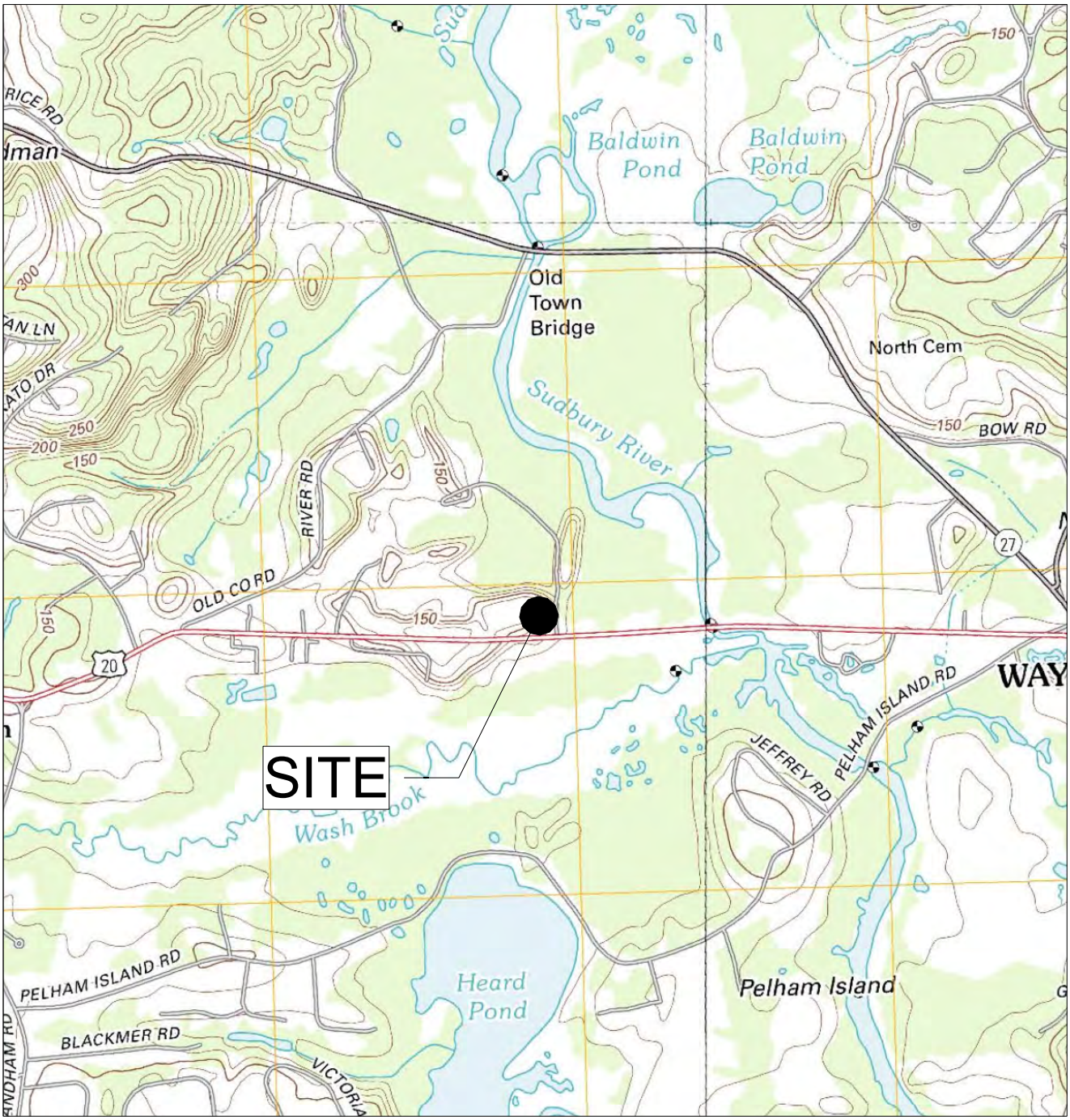
13.0 LIMITATIONS

Our professional services have been performed, our findings obtained, and our conclusions and professional opinion prepared in accordance with customary principles and standards of care practices in the fields of environmental science and engineering. VERTEX is not responsible for the independent conclusions, opinions or recommendations made by others based on the records review, inspections, field exploration, and laboratory test data presented in this report. The professional opinions, data interpretations and conclusions contained herein are based solely on the scope of work performed.

It must be recognized that environmental investigations are inherently limited in the sense that conclusions are drawn, and recommendations developed from information obtained from limited research and investigations. All subsurface conditions at the Site were not field investigated as part of this study and may differ from the conditions implied by the limited investigations described herein. Additionally, the passage of time may result in a change in the environmental characteristics at the Site. VERTEX does not warrant against future operations or conditions, nor does VERTEX warrant against operations or conditions present of a type or at a location not investigated. The MassDEP is required to audit response actions at disposal sites by M.G.L. Chapter 21E §. 3A(o). This law mandates that MassDEP audit a statistically significant number of all the disposal sites that are required to pay annual compliance assurance fees. Regulations that govern the audit process are contained in the MCP (310 CMR 40.1100). M.G.L. c. 21E and the MCP also give the MassDEP the authority to inspect disposal sites, collect environmental samples, and require that pertinent disposal site information be submitted. Due to the inherent flexibility in interpreting the applicable laws, regulations and policies, the audits are often subjective and dependent on the opinion of the auditor. As a result, the auditor could require additional assessment of the Disposal Site and/or remedial action. Based on these considerations, except as required pursuant to its contracts, VERTEX is not and will not be responsible for costs or other possible ramifications of any additional work required by the MassDEP or any other government or private entity.

This report is intended for the sole use of Alta River's Edge, LLC for submittal to the MassDEP. This report, in whole or in part, shall not be relied upon by any other party other than Alta River's Edge, LLC, and the MassDEP, nor used in whole or in part by any other party without the written consent of The Vertex Companies, LLC. The scope of services performed during the investigation documented herein may not satisfy the needs of other users, and any use or re-use of this document or the findings, conclusions, or recommendations is at the sole risk of said user.

FIGURES



N

0 0.5 1.0 1.5

SCALE: 1" = 0.5 miles
(WHEN PRINTED AT 8.5"x11")

SOURCE: UNITED STATES GEOLOGICAL SURVEY MAP FRAMINGHAM MA QUADRANGLE 7.5 MINUTE SERIES (2012)

PROPERTY LOCUS MAP

RIVER'S EDGE
484 - 490 Boston Post Road
Wayland, Massachusetts
RTN 3-36013

Date:	04/22/19
Drawn:	KS
Checked:	FC
Job No.:	67404

FIGURE 1

VERTEX®
100 N WASHINGTON ST, 302
BOSTON, MA 02114
617.275.5407
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LEGEND:

- V-103 (MW) — VERTEX Monitoring Well
- V-113 — Soil Boring
- MW-3 — Monitoring Well Installed by Others
- V-SG-101 — Soil Vapor Sample Point
- Approximate Location of Former USTs
- 32,000 cy Stockpile Material Management Area
- Approximate Configuration of 4,500 cy Stockpile
- Former Firing Range Material Management Area
- Approximate Site Boundary
- PSNC Area
- Area of RTN 3-36013 subject to April 19, 2022 Downgradient Property Status Opinion

0 100 200 300

SCALE: 1" = 100'-0"
(WHEN PRINTED AT 11"x17")

SITE SCHEMATIC			
RIVER'S EDGE 484 - 490 BOSTON POST ROAD WAYLAND, MA RTN 3-36013	Date: 01/14/2022 Drawn: KS Checked: BG Job No.: 67404	FIGURE 2	REVISIONS

VERTEX
100 N WASHINGTON ST, STE 302
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LEGEND:

(118.03)
Approximate Groundwater Elevation

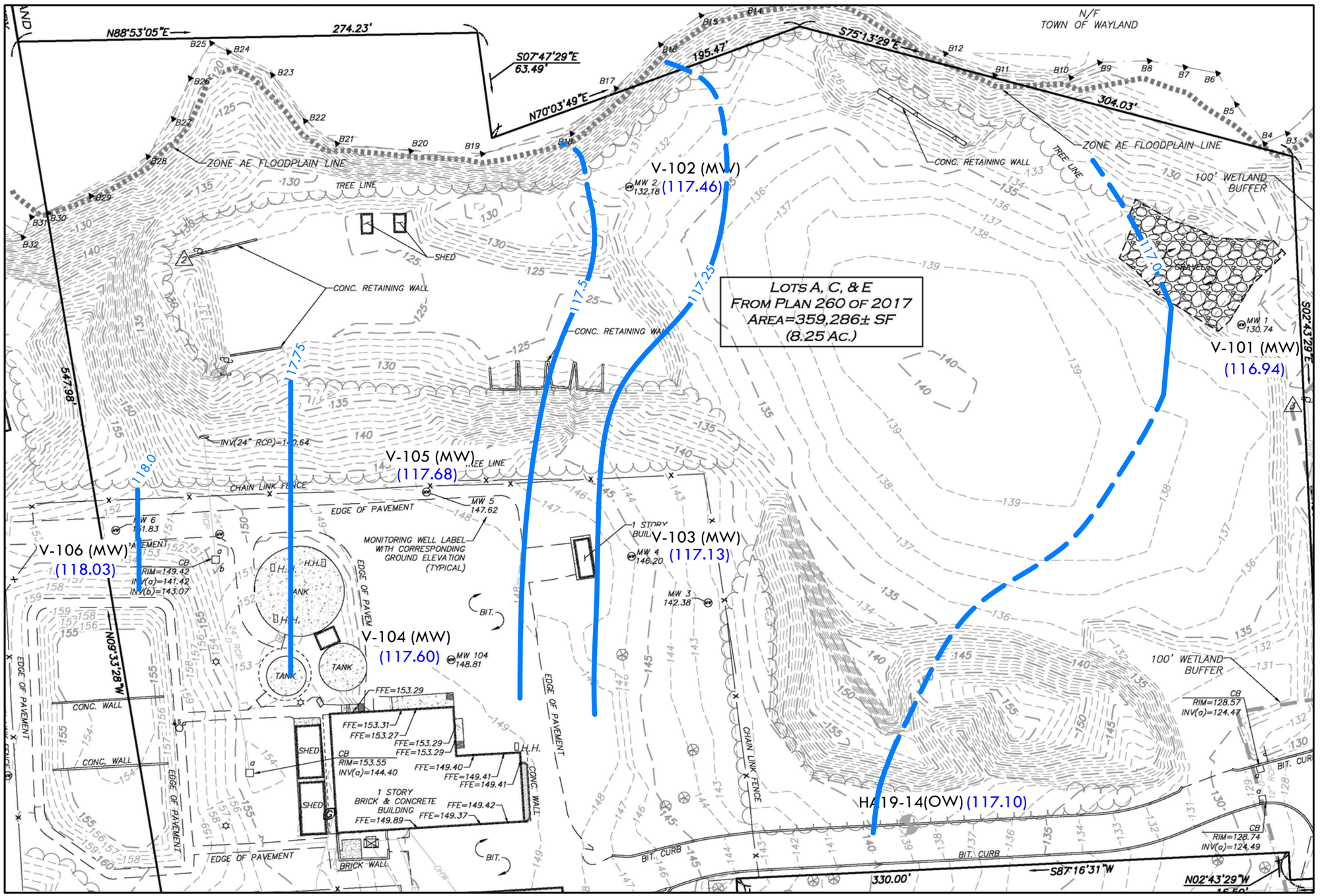
117.25
Contour of Equal Groundwater Elevation

117.25
Inferred Contour of Equal Groundwater Elevation

Notes:

**Elevations are displayed as NAVD 88.*

**Elevations and basemap based on Allen & Major Associates, Inc. Existing Conditions Plan, May 15, 2019.*



0 60 120 180

SCALE: 1" = 60'-0"
(WHEN PRINTED AT 11x17)

GROUNDWATER CONTOUR MAP 2019
RIVER'S EDGE

484 - 490 BOSTON POST ROAD
WAYLAND, MA

File No.:
Date: 05/16/19
Drawn: KS
Checked: FC
Job No.: 67404

FIGURE 3

REVISIONS
04/22/21

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LEGEND:

E5 Test Pit Grid Number

Approximate Configuration of 32,000 cy Stockpile

TP-V-101 4,500 cy Stockpile Test Pit Location

Approximate Configuration of 4,500 cy Stockpile

N

0 50 100 150

SCALE: 1" = 50'-0"
(WHEN PRINTED AT 11"x17")

STOCKPILE GRID LAYOUT

RIVER'S EDGE
484 - 490 BOSTON POST ROAD
WAYLAND, MA
RTN 3-36016

File No.:
Date: 03/05/19
Drawn: KS
Checked: BP
Job No.: 67404

FIGURE 4A

REVISIONS 03/14/19

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LEGEND:

- Confirmation Soil Sample Collected During the Second RAM Status Period
- Confirmation Soil Sample Collected During the Third RAM Status Period
- B3 Grid Number

Samples analyzed for PAHs unless otherwise noted.

Sample locations identified based on detections of OHM >RCS-1 in samples collected from 5 to 10 feet interval within stockpile.

0 50 100 150

SCALE: 1" = 50'-0"
(WHEN PRINTED AT 11x17)

STOCKPILE POST EXCAVATION CONFIRMATORY SAMPLES

RIVER'S EDGE
484-490 BOSTON POST ROAD
WAYLAND, MA
RTN 3-36013

Date: 10/22/2021
Drawn: KS
Checked: WJG
Job No.: 67404

FIGURE 4B

REVISIONS

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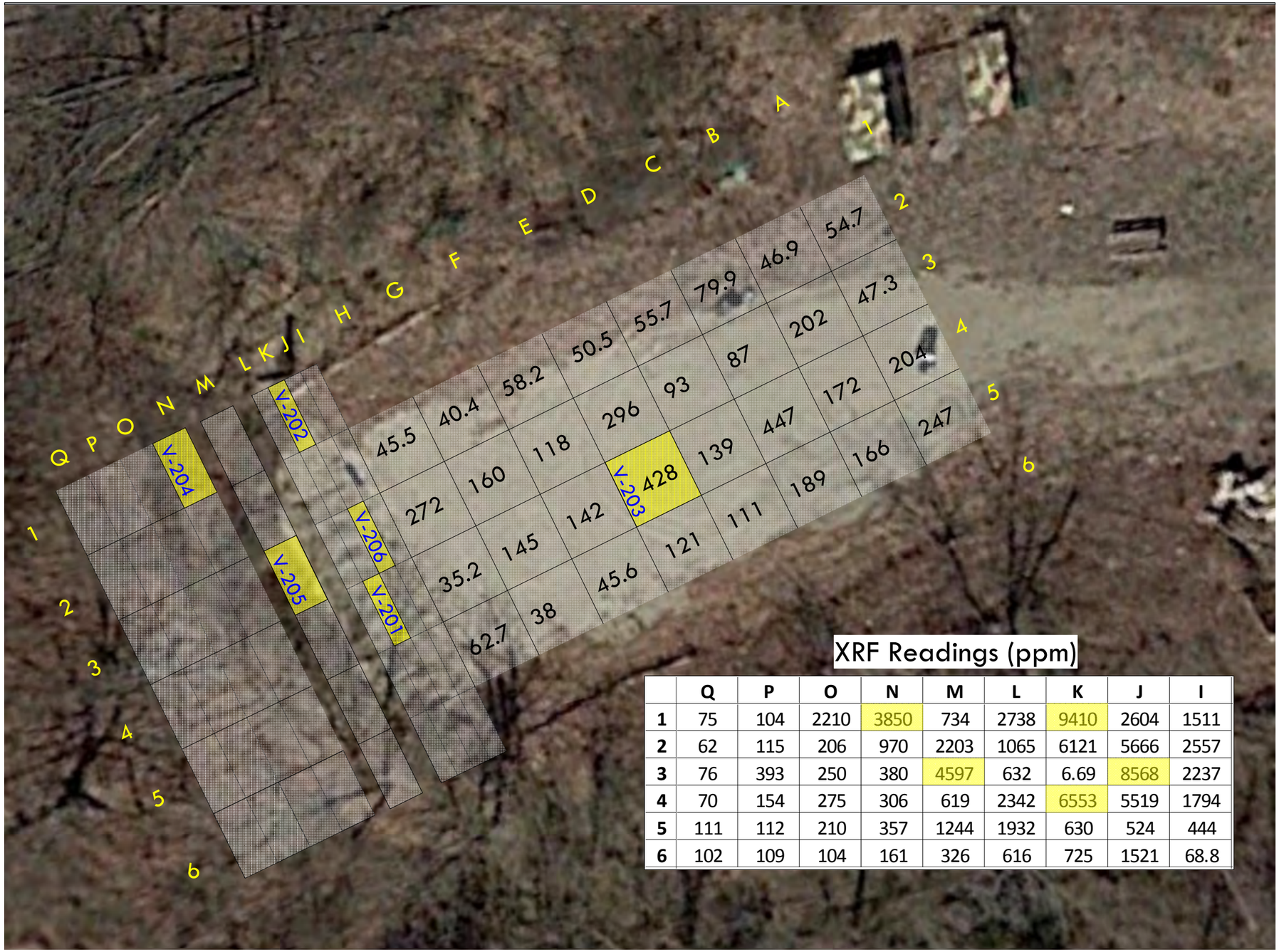
LEGEND:

45.5 XRF Reading (ppm)

V-201 Grid Sampled



XRF Readings (ppm)

	Q	P	O	N	M	L	K	J	I
1	75	104	2210	3850	734	2738	9410	2604	1511
2	62	115	206	970	2203	1065	6121	5666	2557
3	76	393	250	380	4597	632	6.69	8568	2237
4	70	154	275	306	619	2342	6553	5519	1794
5	111	112	210	357	1244	1932	630	524	444
6	102	109	104	161	326	616	725	1521	68.8

N

0 15 30 45

SCALE: 1" = 15'-0"
(WHEN PRINTED AT 11"x17")

FIRING RANGE GRID LAYOUT

RIVER'S EDGE
484 BOSTON POST ROAD
WAYLAND, MA
RTN 3-36013

File No.:
Date: 04/12/19
Drawn: KS
Checked: FC
Job No.: 67404

FIGURE 5A

REVISIONS

VERTEX
100 N WASHINGTON ST, STE 302
BOSTON, MA 02114
617.275.5407
VERTEXENG.COM

C:\Users\khavely\Desktop\2014 CAD standards\VERTEX symbols & standards_for TurboCAD.dxf
Friday, March 07, 2014 11:59:37 AM
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LEGEND:

V-301

Lead Vertical Delineation Sample

V-301 through V-308 (2-4 feet bgs)
V-309 through V-311 (0-2 feet bgs)
V-312 through V-314 (2-4 feet bgs)
V-402 (2-4 feet bgs)

N

0 15 30 45

SCALE: 1" = 15'-0"
(WHEN PRINTED AT 11"x17")

FIRING RANGE VERTICAL DELINEATION SAMPLES

RIVER'S EDGE
484 BOSTON POST ROAD
WAYLAND, MA
RTN 3-36013

File No.:
Date: 04/12/19
Drawn: KS
Checked: FC
Job No.: 67404

FIGURE 5B

REVISIONS

VERTEX®
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BOSTON, MA 02114
617.275.5407
VERTEXENG.COM

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Friday, March 07, 2014 11:59:37 AM
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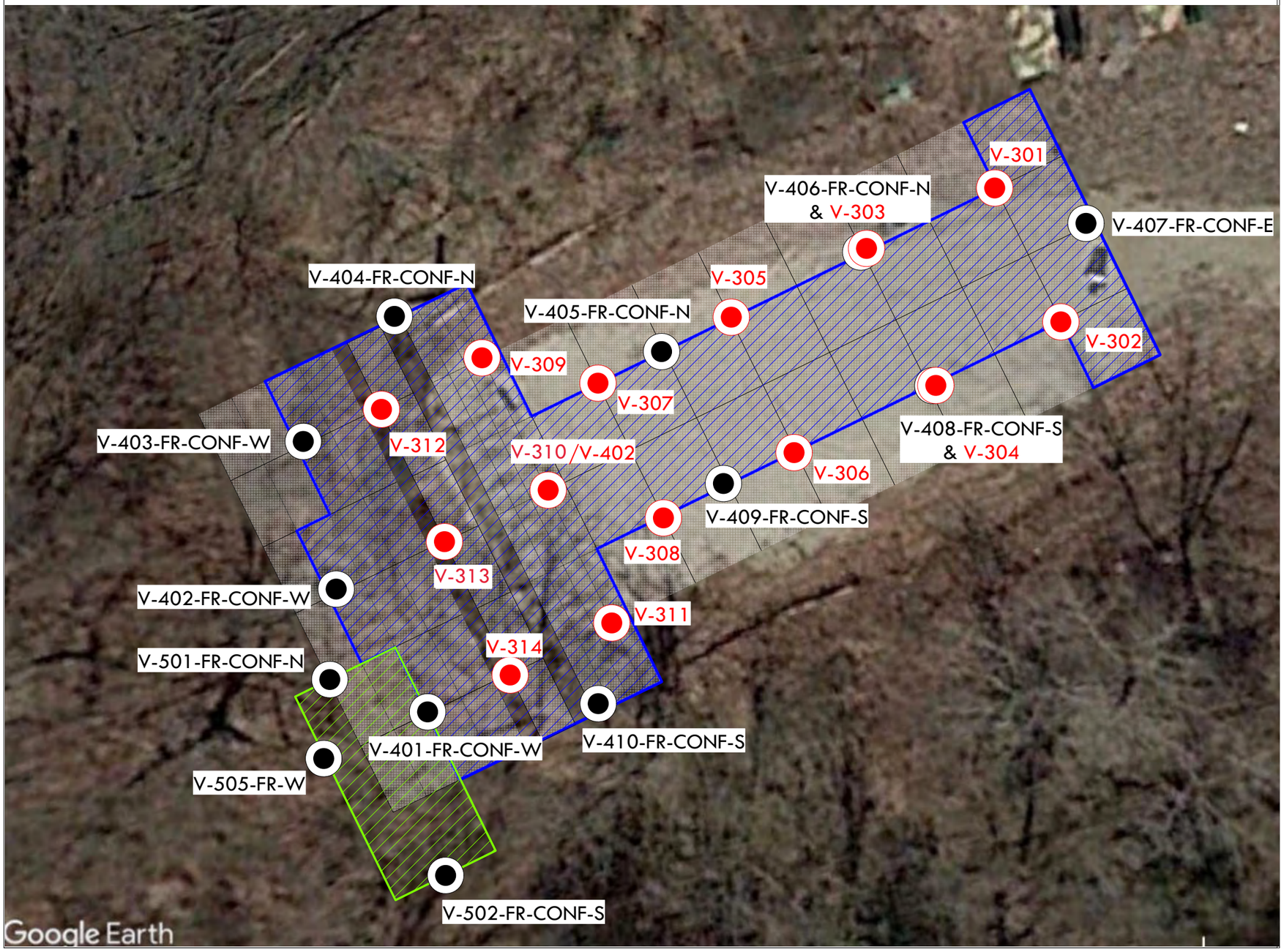
LEGEND:

- Approximate Area Stabilized & Disposed at TREE (See Notes 1 & 3)
- Additional Area Stabilized & Disposed at TREE (See Notes 1 & 4)
- Horizontal Extent Confirmatory Sample Locations
- Vertical Extent Confirmatory Sample Locations

Notes:
1. TREE refers to the disposal facility (Turnkey Recycling & Environmental Enterprises of Rochester, NH).
2. The vertical delineation samples were collected at the following depths:
   -V-301 through V-308: 2 to 4 feet bgs;
   -V-309 through V-311: 0 to 2 feet bgs;
   -V-312 through V-314: 2 to 4 feet bgs; and,
   -V-402: 2 to 4 feet bgs.
3. The initial disposal area (blue) was characterized by composite sample V-401-DISP-FR. Stabilization was confirmed by samples #1 Firing Range through #6 Firing Range.
4. The additional disposal area (green) was characterized by composite sample V-402-DISP-FR. Stabilization was confirmed by samples #7 Firing Range through #11 Firing Range.



N

0 15 30 45

SCALE: 1" = 15'-0"
(WHEN PRINTED AT 11x17)

STABILIZED FIRING RANGE AREA

RIVER'S EDGE
484-490 BOSTON POST ROAD
WAYLAND, MA

File No.:
Date: 10/28/21
Drawn: CLH
Checked: WJG
Job No.: 67404

FIGURE 5C

REVISIONS

VERTEX
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TABLES

Table 1 - Summary of Groundwater Elevations
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Monitoring Well ID	Date	Monitoring Well Elevation	Depth to Water (feet)	Groundwater Elevation
V-101 (MW)	4/1/2019	130.74	13.80	116.94
V-102 (MW)	4/2/2019	132.18	14.72	117.46
	12/22/2020	132.18	15.61	116.57
V-103 (MW)	4/2/2019	146.2	29.07	117.13
	12/22/2020	146.2	30.06	116.14
V-104 (MW)	4/2/2019	148.81	31.21	117.60
	12/22/2020	148.81	32.18	116.63
V-105 (MW)	4/1/2019	147.62	29.94	117.68
	12/22/2020	147.62	31.32	116.30
V-106 (MW)	4/2/2019	151.83	33.80	118.03
	12/22/2020	151.83	34.94	116.89
MW-3	12/22/2020	142.38	28.37	114.01
HA19-14 (OW)	4/2/2019	139	21.9	117.10
V-201(MW)	10/11/2021	132.6	15.2	117.40
V-202(MW)	10/11/2021	133.46	16.54	116.92
V-301(MW)	10/12/2021	133.33	16.21	117.12
V-302(MW)	10/11/2021	149.6	32.08	117.52
V-303(MW)	10/12/2021	148.35	30.89	117.46
V-304(MW)	10/11/2021	129.18	12.47	116.71
V-305(MW)	10/11/2021	132.49	15.75	116.74
V-306(MW)	10/12/2021	150.1	32.82	117.28

Notes:
• Elevation measurements in feet relative to the National Geodetic Vertical Datum of 1998.
• Depth to water measurements collected from top of monitoring well casing.

Table 2 - Summary of Limited Subsurface Investigation Soil Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Sample ID	MCP RCS-1	MCP RCS-2	Units	V-107 (5-10)	V-108 (0-5)	V-109 (5-10)	V-110 (5-10)	V-111 (0-10)	V-112 (0-5)	V-113 (0-5)	V-114 (5-10)	V-115 (5-10)	V-116 (0-5)
Sample Date				3/27/2019	3/27/2019	3/27/2019	3/27/2019	3/27/2019	3/27/2019	3/28/2019	3/28/2019	3/28/2019	3/28/2019
Depth Interval (ft)				5-10	0-5	5-10	5-10	0-10	0-5	0-5	5-10	5-10	0-5
Total Petroleum Hydrocarbons (TPH)													
TPH	1000	3000	mg/kg	ND(8.4)	ND(8.8)	ND(8.7)	11	13	ND(8.6)	ND(8.9)	27	--	--
Volatile Organic Compounds (VOCs)													
Toluene	30	30	mg/kg	ND(0.0015)	ND(0.0018)	ND(0.0030)	0.0045	0.0041	0.0030	ND(0.0018)	0.0068	--	--
Total VOCs	NSE	NSE	mg/kg	ND(CS)	ND(CS)	ND(CS)	0.0045	0.0041	0.003	ND(CS)	0.0068	--	--
Semivolatile Organic Compounds (SVOCs)													
Total SVOCs	NSE	NSE	mg/kg	ND(CS)	ND(CS)	ND(CS)	ND(CS)	ND(CS)	ND(CS)	ND(CS)	ND(CS)	--	--
Metals													
Antimony	20	30	mg/kg	ND(1.7)	ND(1.7)	ND(1.8)	ND(1.7)	ND(1.7)	ND(1.8)	ND(1.8)	ND(1.7)	--	--
Arsenic	20	20	mg/kg	11	5.6	6.5	6.4	11	5.0	2.8	4.5	--	--
Barium	1000	3000	mg/kg	27	30	33	26	32	21	15	31	--	--
Beryllium	90	200	mg/kg	0.27	0.28	0.28	0.26	0.31	0.25	ND(0.18)	0.26	--	--
Cadmium	70	100	mg/kg	0.34	0.19	0.21	0.23	0.37	ND(0.18)	ND(0.18)	ND(0.17)	--	--
Chromium	100	200	mg/kg	12	12	12	33	11	9.1	11	15	--	--
Copper	1000	10000	mg/kg	--	--	--	--	--	--	--	--	--	--
Lead	200	600	mg/kg	6.1	5.2	5.0	3.9	5.6	3.9	2.3	5.8	--	--
Mercury	20	30	mg/kg	ND(0.025)	ND(0.026)	ND(0.026)	ND(0.028)	ND(0.026)	ND(0.027)	ND(0.026)	ND(0.026)	--	--
Nickel	600	1000	mg/kg	9.3	9.4	9.6	11	11	7.1	4.8	12	--	--
Selenium	400	700	mg/kg	ND(3.4)	ND(3.5)	ND(3.5)	ND(3.5)	ND(3.4)	ND(3.5)	ND(3.6)	ND(3.4)	--	--
Silver	100	200	mg/kg	0.42	0.41	0.37	ND(0.35)	0.44	ND(0.35)	ND(0.36)	0.57	--	--
Thallium	8	60	mg/kg	ND(1.7)	ND(1.7)	ND(1.8)	ND(1.7)	ND(1.7)	ND(1.8)	ND(1.8)	ND(1.7)	--	--
Tungsten	NSE	NSE	mg/kg	--	--	--	--	--	--	--	--	--	--
Vanadium	400	700	mg/kg	17	17	17	17	17	12	9.6	23	--	--
Zinc	1000	3000	mg/kg	26	25	23	24	25	17	11	30	--	--
Polychlorinated Biphenyls (PCBs)													
Total PCBs	1	4	mg/kg	ND(0.081)	ND(0.084)	ND(0.082)	ND(0.083)	ND(0.079)	ND(0.079)	ND(0.080)	ND(0.081)	ND(0.082)	ND(0.082)
General Chemistry													
Ignitability	NSE	NSE	present/ absent	absent	absent	absent	absent	absent	absent	absent	absent	--	--
pH	NSE	NSE	pH Units	8.1	8.2	8.1	8.5	8.2	6.3	6.5	6.4	--	--
Reactivity Cyanide	NSE	NSE	mg/kg	ND(3.9)	ND(3.9)	ND(4.0)	ND(4.0)	ND(3.9)	ND(3.9)	ND(3.9)	ND(4.0)	--	--
Reactivity Sulfide	NSE	NSE	mg/kg	ND(19)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	--	--
Solids, Total	NSE	NSE	%	97.0	93.8	94.2	94.8	95.2	94.5	93.3	95.4	94.6	94.6
Specific Conductance	2000	2000	umhos/cm	4.9	5.7	5.8	5.3	6.5	4.7	ND(2.0)	2.1	--	--

Notes:
• mg/kg=milligram per kilogram; uhoms/cm=microohms per centimeter
Contingency Plan
(MCP) 310 CMR 40.0974(2) dated April 2014
• * Regulatory Standard
• ND = Not Detected above laboratory reporting limits shown in parenthesis
• -- = Not Analyzed
• NSE = No Standard Exists
• Highlighted values exceed applicable MCP RCS-1 Reportable Concentration
• Underlined values exceed applicable MCP RCS-2 Reportable Concentration
• Full analytical results are detailed in the laboratory analytical report

Table 3A - Summary of Stockpile Characterization Soil Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Sample ID	MCP RCS-1	Units	TP-A1 (0-5)	TP-A1 (5-10)	TP-A2 (0-5)	TP-A2 (5-10)	TP-A3 (0-5)	TP-A3 (5-10)	TP-A4 (0-5)	TP-A4 (5-10)	TP-A5 (0-5)	TP-A5 (5-10)	TP-B1 (0-5)	TP-B1 (5-10)	TP-B2 (0-5)	TP-B2 (5-10)	TP-B3 (0-5)	TP-B3 (5-10)
Sample Date			3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/11/2019	3/11/2019	3/11/2019	3/11/2019	3/11/2019	3/11/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/11/2019	3/11/2019
Depth Interval (ft)			0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10
Asbestos																		
Asbestos	NSE	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Extractable Petroleum Hydrocarbons (EPH) with target Polynuclear Aromatic Hydrocarbons (PAHs)																		
C09-C18 Aliphatic Hydrocarbons	1000	mg/kg	--	--	--	--	--	--	ND(23)	ND(23)	ND(22)	ND(23)	--	--	--	--	ND(22)	--
C11-C22 Aromatic Hydrocarbons	1000	mg/kg	--	--	--	--	--	--	190	290	280	300	--	--	--	--	160	--
C19-C36 Aliphatics	3000	mg/kg	--	--	--	--	--	--	140	210	220	190	--	--	--	--	120	--
Total Petroleum Hydrocarbons (TPH)																		
TPH	1000	mg/kg	440	530	410	590	790	940	1000	1000	1400	1300	760	480	300	510	1000	690
Volatile Organic Compounds (VOCs)																		
Total VOCs	NSE	mg/kg	ND(0.17)	0.0019	ND(0.18)	ND(0.17)	ND(0.18)	ND(0.16)	ND(0.16)	ND(0.19)	ND(0.21)	ND(0.19)	ND(0.092)	0.0045	ND(0.17)	ND(0.18)	ND(0.19)	ND(0.31)
Semivolatile Organic Compounds (SVOCs)																		
Acenaphthene	4	mg/kg	ND(0.39)	ND(0.20)	ND(0.76)	ND(0.36)	ND(0.77)	ND(0.96)	ND(0.96)	ND(0.98)	ND(0.78)	ND(0.98)	ND(0.38)	ND(0.92)	ND(0.19)	ND(0.37)	ND(0.76)	ND(0.69)
Acenaphthylene	1	mg/kg	ND(0.39)	ND(0.20)	ND(0.76)	ND(0.36)	ND(0.77)	ND(0.96)	ND(0.96)	ND(0.98)	ND(0.78)	ND(0.98)	ND(0.38)	ND(0.92)	ND(0.19)	ND(0.37)	ND(0.76)	ND(0.69)
Anthracene	1000	mg/kg	ND(0.39)	ND(0.20)	ND(0.76)	ND(0.36)	ND(0.77)	ND(0.96)	ND(0.96)	1.2	ND(0.78)	ND(0.98)	ND(0.38)	ND(0.92)	ND(0.19)	ND(0.37)	0.76	ND(0.69)
Benzo(a)Anthracene	7	mg/kg	0.69	0.36	ND(0.76)	1.3	1.2	1.2	1.4	1.4	1.6	2.1	0.72	1.3	0.68	0.84	1.8	ND(0.69)
Benzo(a)Pyrene	2	mg/kg	0.72	0.40	ND(0.76)	1.40	1.20	1.20	1.50	1.50	1.50	2.00	0.82	1.40	0.72	0.92	1.70	ND(0.69)
Benzo(b)Fluoranthene	7	mg/kg	0.84	0.45	0.77	1.60	1.50	1.30	1.70	1.80	1.80	2.50	1.00	1.60	0.86	1.10	2.00	ND(0.69)
Benzo(g,h,i)Perylene	1000	mg/kg	0.44	0.26	ND(0.76)	0.76	0.80	ND(0.96)	ND(0.96)	1.10	0.93	1.20	0.43	0.98	0.57	0.70	1.10	ND(0.69)
Benzo(k)Fluoranthene	70	mg/kg	ND(0.39)	ND(0.20)	ND(0.76)	0.64	ND(0.77)	ND(0.96)	ND(0.96)	ND(0.98)	ND(0.78)	ND(0.98)	0.43	ND(0.92)	0.34	0.40	ND(0.76)	ND(0.69)
Chrysene	70	mg/kg	0.66	0.39	ND(0.76)	1.30	1.20	1.20	1.40	1.30	1.40	1.90	0.80	1.4	0.74	0.88	1.70	ND(0.69)
Dibenzo(a,h)Anthracene	0.7	mg/kg	ND(0.39)	ND(0.20)	*ND(0.76)*	ND(0.36)	*ND(0.77)*	*ND(0.96)*	*ND(0.96)*	*ND(0.98)*	*ND(0.78)*	*ND(0.98)*	ND(0.38)	*ND(0.92)*	ND(0.19)	ND(0.37)	*ND(0.76)*	ND(0.69)
Dibenzofuran	100	mg/kg	ND(0.77)	ND(0.39)	ND(1.5)	ND(0.72)	ND(1.5)	ND(1.9)	ND(1.9)	ND(2.0)	ND(1.6)	ND(2.0)	ND(0.76)	ND(1.8)	ND(0.38)	ND(0.74)	ND(1.5)	ND(1.4)
Fluoranthene	1000	mg/kg	1.30	0.62	0.94	2.30	2.40	1.90	2.80	2.50	3.20	3.80	1.10	2.40	1.30	1.60	3.90	ND(0.69)
Fluorene	1000	mg/kg	ND(0.39)	ND(0.20)	ND(0.76)	ND(0.36)	ND(0.77)	ND(0.96)	ND(0.96)	ND(0.98)	ND(0.78)	ND(0.98)	ND(0.38)	ND(0.92)	ND(0.19)	ND(0.37)	ND(0.76)	ND(0.69)
Indeno(1,2,3-cd)Pyrene	7	mg/kg	0.43	0.27	ND(0.76)	0.81	ND(0.77)	ND(0.96)	ND(0.96)	1.10	0.95	1.30	0.45	ND(0.92)	0.55	0.67	1.20	ND(0.69)
Naphthalene	4	mg/kg	ND(0.39)	ND(0.20)	ND(0.76)	ND(0.36)	ND(0.77)	ND(0.96)	ND(0.96)	ND(0.98)	ND(0.78)	ND(0.98)	ND(0.38)	ND(0.92)	ND(0.19)	ND(0.37)	ND(0.76)	ND(0.69)
Phenanthrene	10	mg/kg	0.56	0.28	ND(0.76)	1.10	1.30	1.20	1.60	1.30	2.70	2.30	0.49	1.70	0.80	0.79	3.10	ND(0.69)
Pyrene	1000	mg/kg	1.40	0.75	1.30	2.50	2.20	2.40	3.20	2.80	3.20	4.30	1.30	3.10	1.40	1.70	3.80	0.82
Total SVOCs	NSE	mg/kg	6.35	3.42	3.01	12.41	10.60	9.20	12.20	13.40	15.68	19.30	6.82	12.58	7.28	8.76	18.50	0.82

Table 3A - Summary of Stockpile Characterization Soil Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Sample ID	MCP RCS-1	Units	TP-A1 (0-5)	TP-A1 (5-10)	TP-A2 (0-5)	TP-A2 (5-10)	TP-A3 (0-5)	TP-A3 (5-10)	TP-A4 (0-5)	TP-A4 (5-10)	TP-A5 (0-5)	TP-A5 (5-10)	TP-B1 (0-5)	TP-B1 (5-10)	TP-B2 (0-5)	TP-B2 (5-10)	TP-B3 (0-5)	TP-B3 (5-10)
Sample Date			3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/11/2019	3/11/2019	3/11/2019	3/11/2019	3/11/2019	3/11/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/11/2019	3/11/2019
Depth Interval (ft)			0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10
Metals																		
Antimony	20	mg/kg	ND(1.8)	ND(1.9)	ND(1.8)	ND(1.7)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	ND(3.4)
Arsenic	20	mg/kg	6.8	5.8	7.6	3.9	7.0	5.7	5.4	4.0	5.7	4.5	9.6	5.4	5.6	5.3	6.0	19
Barium	1000	mg/kg	37	31	34	37	36	30	33	34	40	34	34	31	32	30	32	58
Beryllium	90	mg/kg	0.33	0.38	0.38	0.33	0.26	0.26	0.29	0.28	0.28	0.28	0.36	0.35	0.32	0.30	0.32	0.44
Cadmium	70	mg/kg	0.51	0.38	0.47	0.29	0.45	0.38	0.39	0.30	0.45	0.41	0.50	0.33	0.41	0.54	0.41	1.2
Chromium	100	mg/kg	15	15	15	17	13	15	14	17	14	17	17	14	13	15	15	24
Lead	200	mg/kg	44	25	58	43	69	48	44	36	43	35	34	23	62	53	60	87
Mercury	20	mg/kg	0.051	0.029	0.048	0.032	0.042	0.039	0.095	0.044	0.055	0.054	0.034	ND(0.026)	0.054	0.040	0.036	ND(0.049)
Nickel	600	mg/kg	12	12	11	13	9.8	12	11	13	11	13	13	12	9.4	12	12	19
Selenium	400	mg/kg	ND(3.7)	ND(3.8)	ND(3.7)	ND(3.5)	ND(3.8)	ND(3.8)	ND(3.8)	ND(3.8)	ND(3.8)	ND(3.8)	ND(3.6)	ND(3.6)	ND(3.7)	ND(3.7)	ND(3.7)	ND(6.8)
Silver	100	mg/kg	ND(0.37)	ND(0.38)	ND(0.37)	ND(0.35)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.36)	ND(0.36)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.68)
Thallium	8	mg/kg	ND(1.8)	ND(1.9)	ND(1.8)	ND(1.7)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	ND(3.4)
Vanadium	400	mg/kg	25	26	21	30	18	23	21	28	29	24	23	22	19	22	21	38
Zinc	1000	mg/kg	49	39	49	50	49	43	48	42	52	44	46	34	48	46	51	82
Metals, TCLP																		
Lead	5*	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Polychlorinated Biphenyls (PCBs)																		
Aroclor 1254	1	mg/kg	ND(0.091)	ND(0.093)	ND(0.091)	ND(0.085)	ND(0.090)	ND(0.086)	ND(0.087)	ND(0.091)	ND(0.090)	ND(0.089)	ND(0.089)	ND(0.087)	ND(0.090)	ND(0.089)	ND(0.083)	ND(0.16)
Total PCBs	1	mg/kg	ND(0.091)	ND(0.093)	ND(0.091)	ND(0.085)	ND(0.090)	ND(0.086)	ND(0.087)	ND(0.091)	ND(0.090)	ND(0.089)	ND(0.089)	ND(0.087)	ND(0.090)	ND(0.089)	ND(0.083)	ND(0.16)
General Chemistry																		
Ignitability	NSE	present/ absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent
pH	NSE	pH Units	7.8	7.6	7.9	8.7	7.9	8.1	7.9	8.2	7.7	7.8	7.9	7.2	7.4	7.8	7.8	7.1
Reactivity Cyanide	NSE	mg/kg	ND(3.9)	ND(3.9)	ND(3.9)	ND(3.9)	ND(3.9)	ND(4.0)	ND(3.9)	ND(4.0)	ND(3.9)	ND(3.9)	ND(3.9)	ND(4.0)	ND(3.9)	ND(4.0)	ND(4.0)	ND(4.0)
Reactivity Sulfide	NSE	mg/kg	ND(20)	ND(19)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(19)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)
Solids, Total	NSE	%	ND(20)	ND(19)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(19)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)
Specific Conductance	2000	umhos/cm	12	13	13	37	14	21	20	24	23	20	16	9.0	11	16	17	17

Notes:
- mg/kg=milligram per kilogram; uhoms/cm=microohms per centimeter
- Reportable Concentrations (RCS-1 & RCS-2) taken from the Massachusetts Contingency Plan (MCP) 310 CMR 40.0974(2) dated April 2014
- * Regulatory Standard
- ND = Not Detected above laboratory reporting limits shown in parenthesis
- -- = Not Analyzed
- NSE = No Standard Exists
- Highlighted values exceed applicable MCP RCS-1 Reportable Concentration
- Full analytical results are detailed in the laboratory analytical report

Table 3A - Summary of Stockpile Characterization Soil Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Sample ID	MCP RCS-1	Units	TP-B4 (0-5)	TP-B4 (5-10)	TP-B5 (0-5)	TP-B5 (5-10)	TP-B6 (0-5)	TP-B6 (5-10)	TP-C1 (0-5)	TP-C1 (5-10)	TP-C2 (0-5)	TP-C2 (5-10)	TP-C3 (0-5)	TP-C3 (5-10)	TP-C4 (0-5)	TP-C4 (5-10)	TP-C5 (0-5)	TP-C5 (5-10)
Sample Date			3/11/2019	3/11/2019	3/11/2019	3/11/2019	3/11/2019	3/11/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/11/2019	3/11/2019	3/11/2019	3/11/2019
Depth Interval (ft)			0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10
Asbestos																		
Asbestos	NSE	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Extractable Petroleum Hydrocarbons (EPH) with target Polynuclea																		
C09-C18 Aliphatic Hydrocarbons	1000	mg/kg	--	--	--	--	ND(23)	--	--	ND(55)	ND(21)	--	ND(53)	ND(55)	--	--	--	--
C11-C22 Aromatic Hydrocarbons	1000	mg/kg	--	--	--	--	290	--	--	330	140	--	250	430	--	--	--	--
C19-C36 Aliphatics	3000	mg/kg	--	--	--	--	200	--	--	270	100	--	210	310	--	--	--	--
Total Petroleum Hydrocarbons (TPH)																		
TPH	1000	mg/kg	400	390	540	640	1100	660	900	1200	1200	930	1700	1100	700	530	320	70
Volatile Organic Compounds (VOCs)																		
Total VOCs	NSE	mg/kg	ND(0.17)	ND(0.18)	ND(0.10)	ND(0.086)	ND(0.092)	ND(0.10)	ND(0.10)	ND(0.084)	ND(0.083)	ND(0.075)	ND(0.22)	ND(0.082)	ND(0.16)	ND(0.24)	ND(0.092)	ND(0.19)
Semivolatile Organic Compounds (SVOCs)																		
Acenaphthene	4	mg/kg	ND(0.92)	ND(0.20)	ND(0.38)	ND(0.95)	ND(0.98)	ND(0.93)	ND(0.39)	0.54	ND(0.38)	ND(0.39)	ND(1.9)	ND(0.38)	ND(0.38)	ND(0.41)	ND(0.21)	ND(0.21)
Acenaphthylene	1	mg/kg	ND(0.92)	0.23	ND(0.38)	ND(0.95)	ND(0.98)	ND(0.93)	ND(0.39)	ND(0.39)	0.99	ND(0.39)	*ND(1.9)*	0.56	ND(0.38)	ND(0.41)	ND(0.21)	ND(0.21)
Anthracene	1000	mg/kg	ND(0.92)	ND(0.20)	ND(0.38)	ND(0.95)	ND(0.98)	ND(0.93)	ND(0.39)	1.4	2.0	ND(0.39)	ND(1.9)	0.91	ND(0.38)	ND(0.41)	ND(0.21)	ND(0.21)
Benzo(a)Anthracene	7	mg/kg	ND(0.92)	1.1	0.97	1.9	ND(0.98)	1.5	1.1	2.3	3.2	0.96	2.3	3.0	0.65	0.75	ND(0.21)	ND(0.21)
Benzo(a)Pyrene	2	mg/kg	ND(0.92)	1.10	1.10	1.90	ND(0.98)	1.70	1.30	2.20	2.70	1.10	2.10	2.90	0.73	0.84	ND(0.21)	ND(0.21)
Benzo(b)Fluoranthene	7	mg/kg	ND(0.92)	1.50	1.40	2.60	1.00	2.20	1.50	2.50	3.20	1.10	2.40	3.30	0.88	1.00	ND(0.21)	ND(0.21)
Benzo(g,h,i)Perylene	1000	mg/kg	ND(0.92)	0.65	0.61	1.40	ND(0.98)	0.94	0.72	1.00	1.60	0.76	ND(1.9)	1.30	0.56	0.61	ND(0.21)	ND(0.21)
Benzo(k)Fluoranthene	70	mg/kg	ND(0.92)	0.59	0.51	ND(0.95)	ND(0.98)	ND(0.93)	0.57	0.95	1.20	0.42	ND(1.9)	1.30	ND(0.38)	ND(0.41)	ND(0.21)	ND(0.21)
Chrysene	70	mg/kg	ND(0.92)	1.20	1.10	2.20	ND(0.98)	1.40	1.20	2.20	2.90	1.10	2.20	2.70	0.71	0.83	ND(0.21)	ND(0.21)
Dibenzo(a,h)Anthracene	0.7	mg/kg	*ND(0.92)*	ND(0.20)	ND(0.38)	*ND(0.95)*	*ND(0.98)*	*ND(0.93)*	ND(0.39)	ND(0.39)	0.45	ND(0.39)	*ND(1.9)*	ND(0.38)	ND(0.38)	ND(0.41)	ND(0.21)	ND(0.21)
Dibenzofuran	100	mg/kg	ND(1.8)	ND(0.40)	ND(0.75)	ND(1.9)	ND(2.0)	ND(1.9)	ND(0.78)	ND(0.78)	1.20	ND(0.77)	ND(3.7)	ND(0.75)	ND(0.76)	ND(0.81)	ND(0.42)	ND(0.43)
Fluoranthene	1000	mg/kg	1.00	1.80	1.70	4.90	1.50	2.60	1.90	5.10	7.60	1.50	4.80	6.00	1.20	1.60	0.24	ND(0.21)
Fluorene	1000	mg/kg	ND(0.92)	ND(0.20)	ND(0.38)	ND(0.95)	ND(0.98)	ND(0.93)	ND(0.39)	0.70	0.90	ND(0.39)	ND(1.9)	0.39	ND(0.38)	ND(0.41)	ND(0.21)	ND(0.21)
Indeno(1,2,3-cd)Pyrene	7	mg/kg	ND(0.92)	0.73	0.71	1.40	ND(0.98)	1.00	0.67	1.10	1.80	0.73	ND(1.9)	1.50	0.53	0.60	ND(0.21)	ND(0.21)
Naphthalene	4	mg/kg	ND(0.92)	ND(0.20)	ND(0.38)	ND(0.95)	ND(0.98)	ND(0.93)	ND(0.39)	ND(0.39)	1.2	ND(0.39)	ND(1.9)	ND(0.38)	ND(0.38)	ND(0.41)	ND(0.21)	ND(0.21)
Phenanthrene	10	mg/kg	ND(0.92)	0.81	0.97	2.90	1.10	1.10	0.99	4.60	8.30	0.65	4.50	3.10	0.62	0.76	ND(0.21)	ND(0.21)
Pyrene	1000	mg/kg	1.00	2.20	2.20	4.30	ND(0.98)	3.00	2.40	5.50	7.10	2.20	5.00	6.40	1.30	1.50	0.28	ND(0.21)
Total SVOCs	NSE	mg/kg	2.00	30.80	30.34	53.00	3.60	13.94	11.25	25.15	40.15	9.56	21.00	28.50	6.53	7.74	0.52	ND

Table 3A - Summary of Stockpile Characterization Soil Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Sample ID	MCP RCS-1	Units	TP-B4 (0-5)	TP-B4 (5-10)	TP-B5 (0-5)	TP-B5 (5-10)	TP-B6 (0-5)	TP-B6 (5-10)	TP-C1 (0-5)	TP-C1 (5-10)	TP-C2 (0-5)	TP-C2 (5-10)	TP-C3 (0-5)	TP-C3 (5-10)	TP-C4 (0-5)	TP-C4 (5-10)	TP-C5 (0-5)	TP-C5 (5-10)
Sample Date			3/11/2019	3/11/2019	3/11/2019	3/11/2019	3/11/2019	3/11/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/11/2019	3/11/2019	3/11/2019	3/11/2019
Depth Interval (ft)			0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10
Metals																		
Antimony	20	mg/kg	ND(1.8)	ND(2.0)	ND(1.8)	ND(1.8)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.8)	ND(1.9)	ND(1.8)	ND(2.0)	ND(2.1)	ND(2.1)
Arsenic	20	mg/kg	4.7	11	5.0	5.7	4.7	4.1	4.9	5.2	5.1	5.5	4.5	3.5	7.7	4.0	6.5	6.6
Barium	1000	mg/kg	24	41	31	30	36	33	33	32	36	31	30	35	32	31	35	38
Beryllium	90	mg/kg	0.22	0.35	0.26	0.27	0.27	0.29	0.37	0.36	0.34	0.32	0.28	0.34	0.25	0.24	0.44	0.50
Cadmium	70	mg/kg	0.30	0.61	0.41	0.40	0.39	0.32	0.37	0.39	0.42	0.42	0.29	0.30	0.50	0.34	0.33	0.32
Chromium	100	mg/kg	12	16	14	14	14	14	16	17	14	17	13	16	12	14	15	18
Lead	200	mg/kg	70	120	50	30	46	26	63	62	50	37	27	43	79	65	16	11
Mercury	20	mg/kg	ND(0.026)	0.084	0.035	0.050	0.059	ND(0.027)	0.057	0.028	0.073	0.033	0.048	0.053	0.049	0.095	0.037	ND(0.030)
Nickel	600	mg/kg	8.9	11	11	11	11	11	12	12	12	11	12	13	9.2	8.9	10	12
Selenium	400	mg/kg	ND(3.5)	ND(4.0)	ND(3.7)	ND(3.7)	ND(3.8)	ND(3.7)	ND(3.8)	ND(3.8)	ND(3.8)	ND(3.7)	ND(3.6)	ND(3.7)	ND(3.7)	ND(3.9)	ND(4.1)	ND(4.3)
Silver	100	mg/kg	ND(0.35)	ND(0.40)	ND(0.37)	ND(0.37)	ND(0.38)	ND(0.37)	0.84	ND(0.38)	ND(0.38)	ND(0.37)	ND(0.36)	ND(0.37)	ND(0.37)	ND(0.39)	ND(0.41)	ND(0.43)
Thallium	8	mg/kg	3.4	4.2	ND(1.8)	ND(1.8)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.8)	ND(1.9)	ND(1.8)	ND(2.0)	ND(2.1)	ND(2.1)
Vanadium	400	mg/kg	16	20	19	22	24	22	23	22	24	20	32	31	16	18	18	21
Zinc	1000	mg/kg	31	69	48	42	48	38	52	49	48	46	36	52	48	58	27	28
Metals, TCLP																		
Lead	5*	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Polychlorinated Biphenyls (PCBs)																		
Aroclor 1254	1	mg/kg	ND(0.085)	ND(0.093)	ND(0.086)	ND(0.086)	ND(0.086)	ND(0.087)	ND(0.092)	ND(0.091)	ND(0.089)	ND(0.090)	ND(0.088)	ND(0.089)	ND(0.091)	ND(0.096)	ND(0.096)	ND(0.10)
Total PCBs	1	mg/kg	ND(0.085)	ND(0.093)	ND(0.086)	ND(0.086)	ND(0.086)	ND(0.087)	ND(0.092)	ND(0.091)	ND(0.089)	ND(0.090)	ND(0.088)	ND(0.089)	ND(0.091)	ND(0.096)	ND(0.096)	ND(0.10)
General Chemistry																		
Ignitability	NSE	present/ absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent
pH	NSE	pH Units	8.2	7.6	7.9	8.0	8.1	7.9	7.5	8.3	7.7	7.3	8.5	7.9	8.0	7.9	7.1	8.0
Reactivity Cyanide	NSE	mg/kg	ND(4.0)	ND(3.9)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(3.9)	ND(3.9)	ND(3.9)	ND(4.0)	ND(3.9)	ND(3.9)	ND(3.9)	ND(4.0)	ND(3.9)
Reactivity Sulfide	NSE	mg/kg	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(19)	ND(20)	ND(20)	ND(20)	ND(20)
Solids, Total	NSE	%	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(19)	ND(20)	ND(20)	ND(20)	ND(20)
Specific Conductance	2000	umhos/cm	24	7.2	7.8	13	20	5.8	12	16	8.5	9.8	20	17	9.1	17	21	18

Notes:
- mg/kg=milligram per kilogram; uhoms/cm=microohms per centimeter
- Reportable Concentrations (RCS-1 & RCS-2) taken from the Massachusetts Contingency Plan (MCP) 310 CMR 40.0974(2) dated April 2014
- * Regulatory Standard
- ND = Not Detected above laboratory reporting limits shown in parenthesis
- -- = Not Analyzed
- NSE = No Standard Exists
- Highlighted values exceed applicable MCP RCS-1 Reportable Concentration
- Full analytical results are detailed in the laboratory analytical report

Table 3A - Summary of Stockpile Characterization Soil Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Sample ID	MCP RCS-1	Units	TP-C6 (0-5)	TP-C6 (5-10)	TP-D1 (0-5)	TP-D1 (5-10)	TP-D2 (0-5)	TP-D2 (5-10)	TP-D3 (0-5)	TP-D3 (5-10)	TP-D3 (10-15)	TP-D4 (0-5)	TP-D4 (5-10)	TP-D5 (0-5)	TP-D5 (5-10)	TP-D6 (0-5)	TP-D6 (5-10)	TP-D7 (0-5)
Sample Date			3/11/2019	3/11/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/11/2019	3/11/2019	3/11/2019	3/11/2019	3/11/2019	3/11/2019	3/11/2019
Depth Interval (ft)			0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	10-15	0-5	5-10	0-5	5-10	0-5	5-10	0-5
Asbestos																		
Asbestos	NSE	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Extractable Petroleum Hydrocarbons (EPH) with target Polynuclea																		
C09-C18 Aliphatic Hydrocarbons	1000	mg/kg	--	ND(23)	ND(59)	--	--	--	--	ND(23)	ND(53)	ND(22)	--	ND(25)	--	--	ND(24)	--
C11-C22 Aromatic Hydrocarbons	1000	mg/kg	--	210	250	--	--	--	--	170	360	310	--	230	--	--	210	--
C19-C36 Aliphatics	3000	mg/kg	--	140	190	--	--	--	--	180	240	200	--	220	--	--	160	--
Total Petroleum Hydrocarbons (TPH)																		
TPH	1000	mg/kg	520	1100	1200	910	860	770	840	1100	1200	1000	960	1100	510	590	1000	330
Volatile Organic Compounds (VOCs)																		
Total VOCs	NSE	mg/kg	ND(0.094)	0.0027	ND(0.093)	ND(0.087)	ND(0.088)	ND(0.10)	0.0022	ND(0.090)	ND(0.10)	ND(0.12)	ND(0.17)	ND(0.24)	ND(0.15)	ND(0.085)	ND(0.089)	ND(0.089)
Semivolatile Organic Compounds (SVOCs)																		
Acenaphthene	4	mg/kg	ND(0.96)	4.1	ND(0.41)	ND(0.38)	ND(0.38)	ND(0.39)	ND(0.41)	ND(0.39)	ND(0.37)	ND(0.73)	ND(0.92)	ND(0.84)	ND(0.19)	ND(0.97)	ND(1.0)	ND(0.38)
Acenaphthylene	1	mg/kg	ND(0.96)	ND(0.97)	0.49	ND(0.38)	ND(0.38)	ND(0.39)	ND(0.41)	ND(0.39)	ND(0.37)	ND(0.73)	ND(0.92)	ND(0.84)	ND(0.19)	ND(0.97)	*ND(1.0)*	ND(0.38)
Anthracene	1000	mg/kg	ND(0.96)	9.0	1.4	0.55	ND(0.38)	0.44	ND(0.41)	0.40	0.56	0.89	ND(0.92)	ND(0.84)	ND(0.19)	ND(0.97)	1.5	ND(0.38)
Benzo(a)Anthracene	7	mg/kg	2.1	13	2.8	2.0	1.5	1.2	0.82	1.1	1.8	2.9	ND(0.92)	1.5	0.37	ND(0.97)	3.5	1.0
Benzo(a)Pyrene	2	mg/kg	2.10	12.00	2.70	2.20	1.60	1.40	0.88	1.30	1.80	2.60	ND(0.92)	1.70	0.43	ND(0.97)	3.20	1.00
Benzo(b)Fluoranthene	7	mg/kg	2.50	13.00	3.20	2.50	1.90	1.50	1.00	1.40	2.20	3.00	ND(0.92)	2.40	0.53	ND(0.97)	3.80	1.10
Benzo(g,h,i)Perylene	1000	mg/kg	1.00	5.60	1.50	1.00	1.00	1.00	0.64	0.82	0.83	1.50	ND(0.92)	1.30	0.28	ND(0.97)	1.30	0.58
Benzo(k)Fluoranthene	70	mg/kg	0.97	4.80	1.20	0.88	0.71	0.50	ND(0.41)	0.59	0.85	1.30	ND(0.92)	0.89	0.23	ND(0.97)	1.40	0.44
Chrysene	70	mg/kg	2.20	12.00	2.90	1.90	1.40	1.30	0.83	1.20	1.80	2.60	ND(0.92)	2.00	0.41	ND(0.97)	3.20	1.10
Dibenzo(a,h)Anthracene	0.7	mg/kg	*ND(0.96)*	1.50	ND(0.41)	ND(0.38)	ND(0.38)	ND(0.39)	ND(0.41)	ND(0.39)	ND(0.37)	*ND(0.73)*	*ND(0.92)*	*ND(0.84)*	ND(0.19)	*ND(0.97)*	*ND(1.0)*	ND(0.38)
Dibenzofuran	100	mg/kg	ND(1.9)	ND(1.9)	ND(0.82)	ND(0.76)	ND(0.76)	ND(0.78)	ND(0.82)	ND(0.78)	ND(0.74)	ND(1.5)	ND(1.8)	ND(1.7)	ND(0.38)	ND(1.9)	ND(2.0)	ND(0.76)
Fluoranthene	1000	mg/kg	3.80	23.00	5.70	3.70	2.60	2.30	1.70	2.20	3.30	6.10	0.95	4.30	0.70	ND(0.97)	8.40	2.00
Fluorene	1000	mg/kg	ND(0.96)	4.20	ND(0.41)	ND(0.38)	ND(0.38)	ND(0.39)	ND(0.41)	ND(0.39)	0.38	ND(0.73)	ND(0.92)	ND(0.84)	ND(0.19)	ND(0.97)	ND(1.0)	ND(0.38)
Indeno(1,2,3-cd)Pyrene	7	mg/kg	1.10	6.40	1.70	1.10	1.00	1.10	0.61	0.80	0.93	1.60	ND(0.92)	1.20	0.29	ND(0.97)	1.60	0.67
Naphthalene	4	mg/kg	ND(0.96)	ND(0.97)	ND(0.41)	ND(0.38)	ND(0.38)	ND(0.39)	ND(0.41)	ND(0.39)	ND(0.37)	ND(0.73)	ND(0.92)	ND(0.84)	ND(0.19)	ND(0.97)	ND(1.0)	ND(0.38)
Phenanthrene	10	mg/kg	3.00	19.00	2.40	1.90	1.40	1.10	1.10	1.40	2.40	3.60	ND(0.92)	2.30	0.28	ND(0.97)	4.80	1.30
Pyrene	1000	mg/kg	4.50	19.00	6.00	4.00	2.90	2.40	1.70	2.50	3.80	5.70	1.10	3.70	0.75	ND(0.97)	7.90	2.20
Total SVOCs	NSE	mg/kg	21.17	**120.50**	27.30	19.18	14.51	12.60	8.46	12.21	17.91	28.00	2.05	19.79	3.90	ND	35.60	10.39

Table 3A - Summary of Stockpile Characterization Soil Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Sample ID	MCP RCS-1	Units	TP-C6 (0-5)	TP-C6 (5-10)	TP-D1 (0-5)	TP-D1 (5-10)	TP-D2 (0-5)	TP-D2 (5-10)	TP-D3 (0-5)	TP-D3 (5-10)	TP-D3 (10-15)	TP-D4 (0-5)	TP-D4 (5-10)	TP-D5 (0-5)	TP-D5 (5-10)	TP-D6 (0-5)	TP-D6 (5-10)	TP-D7 (0-5)
Sample Date			3/11/2019	3/11/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/11/2019	3/11/2019	3/11/2019	3/11/2019	3/11/2019	3/11/2019	3/11/2019
Depth Interval (ft)			0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	10-15	0-5	5-10	0-5	5-10	0-5	5-10	0-5
Metals																		
Antimony	20	mg/kg	ND(1.9)	ND(1.9)	ND(2.0)	ND(1.9)	ND(1.9)	ND(1.9)	ND(2.0)	ND(1.9)	ND(1.8)	ND(1.8)	ND(1.8)	ND(2.1)	ND(1.8)	ND(2.0)	ND(2.0)	ND(1.9)
Arsenic	20	mg/kg	5.9	5.3	3.4	4.6	4.7	4.6	6.2	9.1	5.7	3.4	3.7	4.2	4.6	6.8	3.9	6.1
Barium	1000	mg/kg	46	33	32	31	30	34	38	30	29	37	27	25	27	46	32	34
Beryllium	90	mg/kg	0.32	0.27	0.40	0.33	0.34	0.35	0.40	0.32	0.33	0.28	0.27	0.24	0.32	0.34	0.36	0.32
Cadmium	70	mg/kg	0.40	0.36	0.29	0.31	0.33	0.35	0.42	0.57	0.35	0.31	0.27	0.65	0.34	0.44	0.30	0.41
Chromium	100	mg/kg	23	15	17	15	15	17	18	14	15	14	15	14	15	13	19	15
Lead	200	mg/kg	79	30	40	47	53	51	45	110	46	56	25	25	20	110	32	71
Mercury	20	mg/kg	0.064	ND(0.029)	0.055	0.059	0.061	0.045	0.086	0.071	0.031	0.28	ND(0.027)	ND(0.032)	ND(0.028)	0.11	0.041	0.079
Nickel	600	mg/kg	10	12	15	12	12	13	13	10	13	12	13	10	13	9.9	15	10
Selenium	400	mg/kg	ND(3.8)	ND(3.8)	ND(4.1)	ND(3.7)	ND(3.7)	ND(3.8)	ND(3.9)	ND(3.9)	ND(3.7)	ND(3.6)	ND(3.7)	ND(4.2)	ND(3.7)	ND(3.9)	ND(4.0)	ND(3.8)
Silver	100	mg/kg	ND(0.38)	ND(0.38)	ND(0.41)	ND(0.37)	ND(0.37)	ND(0.38)	ND(0.39)	ND(0.39)	ND(0.37)	ND(0.36)	ND(0.37)	ND(0.42)	ND(0.37)	ND(0.39)	ND(0.40)	ND(0.38)
Thallium	8	mg/kg	ND(1.9)	ND(1.9)	ND(2.0)	ND(1.9)	ND(1.9)	ND(1.9)	ND(2.0)	ND(1.9)	ND(1.8)	ND(1.8)	ND(1.8)	ND(2.1)	ND(1.8)	ND(2.0)	ND(2.0)	ND(1.9)
Vanadium	400	mg/kg	20	21	27	25	24	24	26	21	26	26	29	20	23	19	32	20
Zinc	1000	mg/kg	51	39	52	46	50	50	82	68	49	54	37	52	36	56	45	54
Metals, TCLP																		
Lead	5*	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Polychlorinated Biphenyls (PCBs)																		
Aroclor 1254	1	mg/kg	ND(0.089)	ND(0.088)	ND(0.098)	ND(0.090)	ND(0.090)	ND(0.092)	ND(0.097)	ND(0.093)	ND(0.088)	ND(0.087)	ND(0.088)	ND(0.095)	ND(0.085)	ND(0.093)	ND(0.091)	ND(0.088)
Total PCBs	1	mg/kg	ND(0.089)	ND(0.088)	ND(0.098)	ND(0.090)	ND(0.090)	ND(0.092)	ND(0.097)	ND(0.093)	ND(0.088)	ND(0.087)	ND(0.088)	ND(0.095)	ND(0.085)	ND(0.093)	ND(0.091)	ND(0.088)
General Chemistry																		
Ignitability	NSE	present/ absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent
pH	NSE	pH Units	7.3	7.6	7.9	7.9	7.8	7.7	7.7	7.7	8.2	8.2	7.8	8.2	8.5	7.7	7.7	7.7
Reactivity Cyanide	NSE	mg/kg	ND(4.0)	ND(4.0)	ND(3.9)	ND(4.0)	ND(4.0)	ND(3.9)	ND(3.9)	ND(4.0)	ND(3.9)	ND(4.0)	ND(3.9)	ND(4.0)	ND(4.0)	ND(3.9)	ND(4.0)	ND(4.0)
Reactivity Sulfide	NSE	mg/kg	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(19)	ND(19)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)
Solids, Total	NSE	%	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(19)	ND(19)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)
Specific Conductance	2000	umhos/cm	21	17	13	11	8.8	8.7	11	8.0	22	24	6.2	17	11	9.0	23	11

Notes:
- mg/kg=milligram per kilogram; uhoms/cm=microohms per centimeter
- Reportable Concentrations (RCS-1 & RCS-2) taken from the Massachusetts Contingency Plan (MCP) 310 CMR 40.0974(2) dated April 2014
- * Regulatory Standard
- ND = Not Detected above laboratory reporting limits shown in parenthesis
- -- = Not Analyzed
- NSE = No Standard Exists
- Highlighted values exceed applicable MCP RCS-1 Reportable Concentration
- Full analytical results are detailed in the laboratory analytical report

Table 3A - Summary of Stockpile Characterization Soil Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Sample ID	MCP RCS-1	Units	TP-D7 (5-10)	TP-E2 (0-5)	TP-E2 (5-10)	TP-E3 (0-5)	TP-E3 (5-10)	TP-E4 (0-5)	TP-E4 (5-10)	TP-E5 (0-5)	TP-E5 (5-10)	TP-E5 (10-15)	TP-E6 (0-5)	TP-E6 (5-10)	TP-E7 (0-5)	TP-E7 (5-10)	TP-E8 (0-5)	TP-E8 (5-10)
Sample Date			3/11/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019
Depth Interval (ft)			5-10	0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	10-15	0-5	5-10	0-5	5-10	0-5	5-10
Asbestos																		
Asbestos	NSE	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Extractable Petroleum Hydrocarbons (EPH) with target Polynuclea																		
C09-C18 Aliphatic Hydrocarbons	1000	mg/kg	ND(22)	ND(55)	--	--	ND(24)	--	--	--	--	--	--	--	--	--	--	--
C11-C22 Aromatic Hydrocarbons	1000	mg/kg	220	210	--	--	170	--	--	--	--	--	--	--	--	--	--	--
C19-C36 Aliphatics	3000	mg/kg	140	150	--	--	130	--	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (TPH)																		
TPH	1000	mg/kg	1000	1100	870	780	1100	430	680	590	470	110	980	54	430	160	370	300
Volatile Organic Compounds (VOCs)																		
Total VOCs	NSE	mg/kg	ND(0.075)	ND(0.076)	0.0023	ND(0.077)	ND(0.11)	ND(0.20)	0.0052	0.0026	0.0028	ND(0.18)	ND(0.093)	ND(0.097)	ND(0.10)	ND(0.098)	0.0021	0.0036
Semivolatile Organic Compounds (SVOCs)																		
Acenaphthene	4	mg/kg	ND(1.9)	ND(0.75)	ND(0.79)	ND(0.37)	ND(0.40)	ND(0.19)	ND(0.19)	ND(0.94)	ND(0.37)	ND(0.19)	ND(0.94)	ND(0.37)	ND(0.39)	ND(0.36)	ND(0.38)	ND(0.39)
Acenaphthylene	1	mg/kg	*ND(1.9)*	ND(0.75)	ND(0.79)	ND(0.37)	ND(0.40)	ND(0.19)	ND(0.19)	ND(0.94)	ND(0.37)	ND(0.19)	ND(0.94)	ND(0.37)	ND(0.39)	ND(0.36)	ND(0.38)	ND(0.39)
Anthracene	1000	mg/kg	ND(1.9)	ND(0.75)	ND(0.79)	ND(0.37)	1.2	0.55	ND(0.19)	ND(0.94)	ND(0.37)	ND(0.19)	ND(0.94)	ND(0.37)	ND(0.39)	ND(0.36)	0.90	ND(0.39)
Benzo(a)Anthracene	7	mg/kg	ND(1.9)	1.8	1.4	0.42	3.4	1.7	0.45	ND(0.94)	ND(0.37)	ND(0.19)	1.6	ND(0.37)	0.55	ND(0.36)	1.6	0.45
Benzo(a)Pyrene	2	mg/kg	ND(1.9)	1.70	1.50	0.56	3.10	1.60	0.49	ND(0.94)	ND(0.37)	ND(0.19)	1.70	ND(0.37)	0.60	ND(0.36)	1.50	0.53
Benzo(b)Fluoranthene	7	mg/kg	ND(1.9)	1.90	1.70	0.67	3.60	1.90	0.57	0.98	ND(0.37)	ND(0.19)	2.00	ND(0.37)	0.84	ND(0.36)	1.70	0.60
Benzo(g,h,i)Perylene	1000	mg/kg	ND(1.9)	1.20	0.99	ND(0.37)	1.50	0.71	0.37	ND(0.94)	ND(0.37)	ND(0.19)	ND(0.94)	ND(0.37)	ND(0.39)	ND(0.36)	0.89	ND(0.39)
Benzo(k)Fluoranthene	70	mg/kg	ND(1.9)	ND(0.75)	ND(0.79)	ND(0.37)	1.40	0.72	0.21	ND(0.94)	ND(0.37)	ND(0.19)	ND(0.94)	ND(0.37)	ND(0.39)	ND(0.36)	0.62	ND(0.39)
Chrysene	70	mg/kg	ND(1.9)	1.80	1.30	0.48	3.30	1.50	0.46	ND(0.94)	ND(0.37)	ND(0.19)	1.90	ND(0.37)	0.64	ND(0.36)	1.50	0.48
Dibenzo(a,h)Anthracene	0.7	mg/kg	*ND(1.9)*	*ND(0.75)*	*ND(0.79)*	ND(0.37)	ND(0.40)	ND(0.19)	ND(0.19)	*ND(0.94)*	ND(0.37)	ND(0.19)	*ND(0.94)*	ND(0.37)	ND(0.39)	ND(0.36)	ND(0.38)	ND(0.39)
Dibenzofuran	100	mg/kg	ND(3.7)	ND(1.5)	ND(1.6)	ND(0.75)	ND(0.80)	ND(0.38)	ND(0.39)	ND(1.9)	ND(0.75)	ND(0.38)	ND(1.9)	ND(0.74)	ND(0.79)	ND(0.73)	ND(0.76)	ND(0.78)
Fluoranthene	1000	mg/kg	2.90	3.10	2.50	0.70	6.60	3.00	0.84	1.40	ND(0.37)	ND(0.19)	2.90	ND(0.37)	0.92	ND(0.36)	3.70	0.75
Fluorene	1000	mg/kg	ND(1.9)	ND(0.75)	ND(0.79)	ND(0.37)	ND(0.40)	0.21	ND(0.19)	ND(0.94)	ND(0.37)	ND(0.19)	ND(0.94)	ND(0.37)	ND(0.39)	ND(0.36)	0.47	ND(0.39)
Indeno(1,2,3-cd)Pyrene	7	mg/kg	ND(1.9)	1.10	1.00	ND(0.37)	1.70	0.87	0.34	ND(0.94)	ND(0.37)	ND(0.19)	0.96	ND(0.37)	0.41	ND(0.36)	1.00	ND(0.39)
Naphthalene	4	mg/kg	ND(1.9)	ND(0.75)	ND(0.79)	ND(0.37)	ND(0.40)	ND(0.19)	ND(0.19)	ND(0.94)	ND(0.37)	ND(0.19)	ND(0.94)	ND(0.37)	ND(0.39)	ND(0.36)	ND(0.38)	ND(0.39)
Phenanthrene	10	mg/kg	2.20	2.20	1.30	ND(0.37)	4.20	2.00	0.43	ND(0.94)	ND(0.37)	ND(0.19)	1.40	ND(0.37)	ND(0.39)	ND(0.36)	3.30	ND(0.39)
Pyrene	1000	mg/kg	3.00	3.60	2.60	0.81	7.50	3.40	1.00	1.40	0.40	ND(0.19)	3.40	ND(0.37)	1.20	ND(0.36)	3.60	0.95
Total SVOCs	NSE	mg/kg	8.10	16.60	12.89	3.22	32.90	15.91	4.71	3.78	0.40	ND	14.26	ND	4.61	ND	18.28	3.31

Table 3A - Summary of Stockpile Characterization Soil Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Sample ID	MCP RCS-1	Units	TP-D7 (5-10)	TP-E2 (0-5)	TP-E2 (5-10)	TP-E3 (0-5)	TP-E3 (5-10)	TP-E4 (0-5)	TP-E4 (5-10)	TP-E5 (0-5)	TP-E5 (5-10)	TP-E5 (10-15)	TP-E6 (0-5)	TP-E6 (5-10)	TP-E7 (0-5)	TP-E7 (5-10)	TP-E8 (0-5)	TP-E8 (5-10)
Sample Date			3/11/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019
Depth Interval (ft)			5-10	0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	10-15	0-5	5-10	0-5	5-10	0-5	5-10
Metals																		
Antimony	20	mg/kg	ND(1.9)	ND(1.8)	ND(1.9)	ND(1.8)	ND(2.0)	ND(1.9)	ND(1.9)	ND(1.8)	ND(1.8)	ND(1.9)	ND(1.9)	ND(1.9)	9.3	ND(1.8)	ND(1.9)	ND(1.9)
Arsenic	20	mg/kg	4.8	4.8	3.9	5.2	5.3	3.7	4.9	4.4	5.9	4.3	5.1	4.4	8.7	3.7	6.4	6.6
Barium	1000	mg/kg	34	33	38	33	42	37	34	38	26	29	28	27	34	22	31	32
Beryllium	90	mg/kg	0.29	0.37	0.37	0.38	0.42	0.34	0.34	0.33	0.38	0.30	0.32	0.33	0.37	0.23	0.33	0.34
Cadmium	70	mg/kg	0.39	0.37	0.40	0.34	0.40	0.31	0.36	0.35	0.33	0.31	0.41	0.29	0.52	0.22	0.42	0.43
Chromium	100	mg/kg	17	15	16	17	18	14	16	15	15	14	14	15	15	8.5	15	16
Lead	200	mg/kg	40	41	53	25	53	74	23	26	19	37	48	8.9	780	300	59	41
Mercury	20	mg/kg	0.038	0.046	0.045	0.031	0.072	0.075	ND(0.028)	ND(0.026)	ND(0.026)	ND(0.028)	ND(0.029)	ND(0.026)	0.030	ND(0.026)	0.040	0.036
Nickel	600	mg/kg	13	13	13	14	14	12	13	12	13	11	11	10	11	7.2	12	12
Selenium	400	mg/kg	ND(3.8)	ND(3.7)	ND(3.9)	ND(3.6)	ND(4.0)	ND(3.7)	ND(3.7)	ND(3.6)	ND(3.6)	ND(3.8)	ND(3.7)	ND(3.7)	ND(3.9)	ND(3.5)	ND(3.8)	ND(3.8)
Silver	100	mg/kg	ND(0.38)	ND(0.37)	ND(0.39)	ND(0.36)	ND(0.40)	ND(0.37)	ND(0.37)	ND(0.36)	ND(0.36)	ND(0.38)	ND(0.37)	ND(0.37)	ND(0.39)	ND(0.35)	ND(0.38)	ND(0.38)
Thallium	8	mg/kg	ND(1.9)	ND(1.8)	ND(1.9)	ND(1.8)	ND(2.0)	ND(1.9)	ND(1.9)	ND(1.8)	ND(1.8)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.8)	ND(1.9)	ND(1.9)
Vanadium	400	mg/kg	25	29	28	25	27	27	25	26	24	17	22	17	20	13	22	24
Zinc	1000	mg/kg	51	53	51	44	59	50	36	39	33	48	48	26	56	44	51	48
Metals, TCLP																		
Lead	5*	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Polychlorinated Biphenyls (PCBs)																		
Aroclor 1254	1	mg/kg	ND(0.090)	ND(0.088)	ND(0.093)	ND(0.089)	ND(0.096)	ND(0.083)	ND(0.088)	ND(0.085)	ND(0.082)	ND(0.085)	ND(0.085)	ND(0.083)	ND(0.090)	ND(0.081)	ND(0.090)	ND(0.089)
Total PCBs	1	mg/kg	ND(0.090)	ND(0.088)	ND(0.093)	ND(0.089)	ND(0.096)	ND(0.083)	ND(0.088)	ND(0.085)	ND(0.082)	ND(0.085)	ND(0.085)	ND(0.083)	ND(0.090)	ND(0.081)	ND(0.090)	ND(0.089)
General Chemistry																		
Ignitability	NSE	present/ absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent
pH	NSE	pH Units	8.2	7.7	8.0	8.2	8.1	8.5	7.9	7.9	8.6	7.7	8.1	8.3	7.2	7.6	8.2	8.3
Reactivity Cyanide	NSE	mg/kg	ND(4.0)	ND(3.9)	ND(3.9)	ND(3.9)	ND(4.0)	ND(3.9)	ND(3.9)	ND(3.9)	ND(3.9)	ND(3.9)	ND(3.9)	ND(3.9)	ND(4.0)	ND(3.9)	ND(3.9)	ND(4.0)
Reactivity Sulfide	NSE	mg/kg	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(19)	ND(19)	ND(19)	ND(20)	ND(19)	ND(19)	ND(20)	ND(20)	ND(20)	ND(19)	ND(20)
Solids, Total	NSE	%	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(19)	ND(19)	ND(19)	ND(20)	ND(19)	ND(19)	ND(20)	ND(20)	ND(20)	ND(19)	ND(20)
Specific Conductance	2000	umhos/cm	18	18	15	13	19	10	10	12	11	7.0	9.3	9.3	10	18	11	9.8

Notes:
- mg/kg=milligram per kilogram; uhoms/cm=microohms per centimeter
- Reportable Concentrations (RCS-1 & RCS-2) taken from the Massachusetts Contingency Plan (MCP) 310 CMR 40.0974(2) dated April 2014
- * Regulatory Standard
- ND = Not Detected above laboratory reporting limits shown in parenthesis
- -- = Not Analyzed
- NSE = No Standard Exists
- Highlighted values exceed applicable MCP RCS-1 Reportable Concentration
- Full analytical results are detailed in the laboratory analytical report

Table 3A - Summary of Stockpile Characterization Soil Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Sample ID	MCP RCS-1	Units	TP-F3 (0-5)	TP-F3 (5-10)	TP-F4 (0-5)	TP-F4 (5-10)	TP-F5 (0-5)	TP-F5 (5-10)
Sample Date			3/12/2019	3/12/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019
Depth Interval (ft)			0-5	5-10	0-5	5-10	0-5	5-10
Asbestos								
Asbestos	NSE	%	0.00	0.00	0.00	0.00	0.00	0.00
Extractable Petroleum Hydrocarbons (EPH) with target Polynuclea								
C09-C18 Aliphatic Hydrocarbons	1000	mg/kg	ND(55)	--	--	--	--	--
C11-C22 Aromatic Hydrocarbons	1000	mg/kg	280	--	--	--	--	--
C19-C36 Aliphatics	3000	mg/kg	220	--	--	--	--	--
Total Petroleum Hydrocarbons (TPH)								
TPH	1000	mg/kg	1300	910	390	310	640	680
Volatile Organic Compounds (VOCs)								
Total VOCs	NSE	mg/kg	ND(0.086)	ND(0.096)	ND(0.16)	0.0049	ND(0.20)	0.004
Semivolatile Organic Compounds (SVOCs)								
Acenaphthene	4	mg/kg	ND(0.76)	ND(0.82)	ND(0.20)	ND(0.19)	ND(0.97)	ND(0.96)
Acenaphthylene	1	mg/kg	ND(0.76)	ND(0.82)	ND(0.20)	ND(0.19)	ND(0.97)	ND(0.96)
Anthracene	1000	mg/kg	ND(0.76)	ND(0.82)	ND(0.20)	ND(0.19)	ND(0.97)	ND(0.96)
Benzo(a)Anthracene	7	mg/kg	1.5	ND(0.82)	0.49	0.39	1.0	ND(0.96)
Benzo(a)Pyrene	2	mg/kg	1.60	ND(0.82)	0.53	0.42	1.10	ND(0.96)
Benzo(b)Fluoranthene	7	mg/kg	1.80	ND(0.82)	0.60	0.45	1.50	1.10
Benzo(g,h,i)Perylene	1000	mg/kg	0.93	ND(0.82)	0.25	0.22	ND(0.97)	ND(0.96)
Benzo(k)Fluoranthene	70	mg/kg	ND(0.76)	ND(0.82)	0.26	ND(0.19)	ND(0.97)	ND(0.96)
Chrysene	70	mg/kg	1.50	ND(0.82)	0.56	0.44	1.10	ND(0.96)
Dibenzo(a,h)Anthracene	0.7	mg/kg	*ND(0.76)*	*ND(0.82)*	ND(0.20)	ND(0.19)	*ND(0.97)*	*ND(0.96)*
Dibenzofuran	100	mg/kg	ND(1.5)	ND(1.6)	ND(0.39)	ND(0.38)	ND(1.9)	ND(1.9)
Fluoranthene	1000	mg/kg	2.90	0.83	0.80	0.54	1.80	1.20
Fluorene	1000	mg/kg	ND(0.76)	ND(0.82)	ND(0.20)	ND(0.19)	ND(0.97)	ND(0.96)
Indeno(1,2,3-cd)Pyrene	7	mg/kg	0.95	ND(0.82)	0.25	0.23	ND(0.97)	ND(0.96)
Naphthalene	4	mg/kg	ND(0.76)	ND(0.82)	ND(0.20)	ND(0.19)	ND(0.97)	ND(0.96)
Phenanthrene	10	mg/kg	1.50	ND(0.82)	0.62	0.31	ND(0.97)	ND(0.96)
Pyrene	1000	mg/kg	3.00	0.90	1.10	0.82	2.20	1.50
Total SVOCs	NSE	mg/kg	14.18	1.73	4.97	3.43	7.70	3.80

Table 3A - Summary of Stockpile Characterization Soil Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Sample ID	MCP RCS-1	Units	TP-F3 (0-5)	TP-F3 (5-10)	TP-F4 (0-5)	TP-F4 (5-10)	TP-F5 (0-5)	TP-F5 (5-10)
Sample Date			3/12/2019	3/12/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019
Depth Interval (ft)			0-5	5-10	0-5	5-10	0-5	5-10
Metals								
Antimony	20	mg/kg	ND(1.9)	ND(2.0)	ND(2.0)	ND(1.8)	ND(2.0)	ND(1.9)
Arsenic	20	mg/kg	4.0	4.7	7.0	5.8	4.8	4.4
Barium	1000	mg/kg	32	34	31	28	29	28
Beryllium	90	mg/kg	0.35	0.34	0.37	0.37	0.28	0.31
Cadmium	70	mg/kg	0.34	0.40	0.44	0.39	0.56	0.49
Chromium	100	mg/kg	17	13	16	16	21	15
Lead	200	mg/kg	39	26	34	32	25	26
Mercury	20	mg/kg	0.045	0.030	ND(0.029)	0.028	ND(0.028)	ND(0.027)
Nickel	600	mg/kg	14	12	12	11	12	11
Selenium	400	mg/kg	ND(3.7)	ND(4.1)	ND(3.9)	ND(3.7)	ND(3.9)	ND(3.7)
Silver	100	mg/kg	ND(0.37)	ND(0.41)	ND(0.39)	ND(0.37)	ND(0.39)	ND(0.37)
Thallium	8	mg/kg	ND(1.9)	ND(2.0)	ND(2.0)	ND(1.8)	ND(2.0)	ND(1.9)
Vanadium	400	mg/kg	26	21	21	19	20	21
Zinc	1000	mg/kg	47	67	38	38	67	49
Metals, TCLP								
Lead	5*	mg/L	--	--	--	--	--	--
Polychlorinated Biphenyls (PCBs)								
Aroclor 1254	1	mg/kg	ND(0.089)	0.21	ND(0.088)	ND(0.086)	ND(0.092)	ND(0.087)
Total PCBs	1	mg/kg	ND(0.089)	0.21	ND(0.088)	ND(0.086)	ND(0.092)	ND(0.087)
General Chemistry								
Ignitability	NSE	present/ absent	absent	absent	absent	absent	absent	absent
pH	NSE	pH Units	7.7	7.9	7.7	7.6	7.9	8.0
Reactivity Cyanide	NSE	mg/kg	ND(3.9)	ND(4.0)	ND(3.9)	ND(3.9)	ND(3.9)	ND(4.0)
Reactivity Sulfide	NSE	mg/kg	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)
Solids, Total	NSE	%	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)
Specific Conductance	2000	umhos/cm	17	31	11	16	9.0	6.7

Notes:
- mg/kg=milligram per kilogram; uhoms/cm=microohms per centimeter
- Reportable Concentrations (RCS-1 & RCS-2) taken from the Massachusetts Contingency Plan (MCP) 310 CMR 40.0974(2) dated April 2014
- * Regulatory Standard
- ND = Not Detected above laboratory reporting limits shown in parenthesis
- -- = Not Analyzed
- NSE = No Standard Exists
- Highlighted values exceed applicable MCP RCS-1 Reportable Concentration
- Full analytical results are detailed in the laboratory analytical report

Table 3A - Summary of Stockpile Characterization Soil Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Sample ID	MCP RCS-1	Units	TP-F6 (0-5)	TP-F6 (5-10)	TP-F7 (0-5)	TP-F7 (5-10)	TP-F8 (0-5)	TP-F8 (5-10)	TP-G6 (0-5)	TP-G6 (5-10)	TP-G7 (0-5)	TP-G7 (5-10)	TP-V-101	TP-V-102	TP-V-103	TP-V-104	TP-V-105
Sample Date			3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019
Depth Interval (ft)			0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	-	-	-	-	-
Asbestos																	
Asbestos	NSE	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Extractable Petroleum Hydrocarbons (EPH) with target Polynuclea																	
C09-C18 Aliphatic Hydrocarbons	1000	mg/kg	--	--	--	--	--	--	--	--	--	--	--	ND(22)	--	--	--
C11-C22 Aromatic Hydrocarbons	1000	mg/kg	--	--	--	--	--	--	--	--	--	--	--	110	--	--	--
C19-C36 Aliphatics	3000	mg/kg	--	--	--	--	--	--	--	--	--	--	--	81	--	--	--
Total Petroleum Hydrocarbons (TPH)																	
TPH	1000	mg/kg	420	510	580	560	250	380	400	430	360	430	500	3100	530	960	180
Volatile Organic Compounds (VOCs)																	
Total VOCs	NSE	mg/kg	0.0026	ND(0.12)	ND(0.11)	ND(0.082)	ND(0.11)	ND(0.089)	ND(0.12)	ND(0.12)	ND(0.11)	0.0026	ND(0.16)	ND(0.17)	ND(0.28)	ND(0.18)	ND(0.23)
Semivolatile Organic Compounds (SVOCs)																	
Acenaphthene	4	mg/kg	ND(0.37)	ND(0.40)	ND(0.37)	ND(0.97)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.39)	ND(0.39)	ND(0.38)	ND(0.75)	ND(0.93)	ND(0.20)	ND(0.38)	ND(0.20)
Acenaphthylene	1	mg/kg	ND(0.37)	ND(0.40)	ND(0.37)	ND(0.97)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.39)	ND(0.39)	ND(0.38)	ND(0.75)	ND(0.93)	ND(0.20)	ND(0.38)	ND(0.20)
Anthracene	1000	mg/kg	ND(0.37)	ND(0.40)	ND(0.37)	ND(0.97)	0.46	ND(0.38)	ND(0.38)	ND(0.39)	ND(0.39)	ND(0.38)	ND(0.75)	ND(0.93)	ND(0.20)	ND(0.38)	ND(0.20)
Benzo(a)Anthracene	7	mg/kg	1.1	1.2	0.81	ND(0.97)	1.3	0.50	0.95	0.64	0.57	0.57	1.2	1.3	0.22	ND(0.38)	0.37
Benzo(a)Pyrene	2	mg/kg	1.20	1.30	0.90	ND(0.97)	1.30	0.58	0.98	0.73	0.58	0.58	1.30	1.20	0.24	ND(0.38)	0.32
Benzo(b)Fluoranthene	7	mg/kg	1.40	1.60	1.10	ND(0.97)	1.40	0.67	1.20	0.86	0.71	0.68	1.40	1.40	0.26	0.42	0.36
Benzo(g,h,i)Perylene	1000	mg/kg	0.65	0.68	0.45	ND(0.97)	0.85	0.43	0.57	ND(0.39)	ND(0.39)	ND(0.38)	ND(0.75)	ND(0.93)	ND(0.20)	ND(0.38)	ND(0.20)
Benzo(k)Fluoranthene	70	mg/kg	0.53	0.66	0.46	ND(0.97)	0.51	ND(0.38)	0.49	ND(0.39)	ND(0.39)	ND(0.38)	ND(0.75)	ND(0.93)	ND(0.20)	ND(0.38)	ND(0.20)
Chrysene	70	mg/kg	1.20	1.40	0.92	ND(0.97)	1.40	0.57	0.95	0.72	0.60	0.58	1.10	1.20	ND(0.20)	ND(0.38)	0.33
Dibenzo(a,h)Anthracene	0.7	mg/kg	ND(0.37)	ND(0.40)	ND(0.37)	*ND(0.97)*	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.39)	ND(0.39)	ND(0.38)	*ND(0.75)*	*ND(0.93)*	ND(0.20)	ND(0.38)	ND(0.20)
Dibenzofuran	100	mg/kg	ND(0.75)	ND(0.79)	ND(0.75)	ND(1.9)	ND(0.76)	ND(0.76)	ND(0.75)	ND(0.79)	ND(0.77)	ND(0.77)	ND(1.5)	ND(1.9)	ND(0.41)	ND(0.77)	ND(0.41)
Fluoranthene	1000	mg/kg	2.20	2.70	1.50	ND(0.97)	2.70	0.89	1.60	1.10	0.96	1.10	2.00	2.20	0.41	ND(0.38)	0.77
Fluorene	1000	mg/kg	ND(0.37)	ND(0.40)	ND(0.37)	ND(0.97)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.39)	ND(0.39)	ND(0.38)	ND(0.75)	ND(0.93)	ND(0.20)	ND(0.38)	ND(0.20)
Indeno(1,2,3-cd)Pyrene	7	mg/kg	0.69	0.75	0.54	ND(0.97)	0.96	0.44	0.65	0.47	ND(0.39)	ND(0.38)	0.86	ND(0.93)	ND(0.20)	ND(0.38)	0.21
Naphthalene	4	mg/kg	ND(0.37)	ND(0.40)	ND(0.37)	ND(0.97)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.39)	ND(0.39)	ND(0.38)	ND(0.75)	ND(0.93)	ND(0.20)	ND(0.38)	ND(0.20)
Phenanthrene	10	mg/kg	1.10	1.60	0.97	ND(0.97)	2.20	0.40	0.93	0.62	0.58	0.82	1.10	ND(0.93)	0.21	ND(0.38)	0.76
Pyrene	1000	mg/kg	2.30	2.80	1.70	ND(0.97)	3.10	1.10	1.90	1.30	1.20	1.20	2.20	2.50	0.42	0.53	0.87
Total SVOCs	NSE	mg/kg	11.27	13.49	8.54	ND	14.42	5.08	9.27	5.80	4.63	4.96	9.96	8.50	1.54	0.95	3.62

Table 3A - Summary of Stockpile Characterization Soil Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Sample ID	MCP RCS-1	Units	TP-F6 (0-5)	TP-F6 (5-10)	TP-F7 (0-5)	TP-F7 (5-10)	TP-F8 (0-5)	TP-F8 (5-10)	TP-G6 (0-5)	TP-G6 (5-10)	TP-G7 (0-5)	TP-G7 (5-10)	TP-V-101	TP-V-102	TP-V-103	TP-V-104	TP-V-105
Sample Date			3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/1/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019	3/12/2019
Depth Interval (ft)			0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	0-5	5-10	-	-	-	-	-
Metals																	
Antimony	20	mg/kg	ND(1.8)	ND(1.9)	ND(1.8)	ND(1.9)	ND(1.8)	ND(1.8)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.8)	ND(1.8)	ND(2.0)	ND(1.9)	ND(2.0)
Arsenic	20	mg/kg	4.1	4.5	6.7	5.9	6.4	6.9	5.3	5.3	5.0	11	4.3	5.3	6.9	4.7	4.3
Barium	1000	mg/kg	46	37	30	30	38	34	31	28	37	38	25	42	56	37	39
Beryllium	90	mg/kg	0.31	0.32	0.35	0.35	0.35	0.35	0.35	0.30	0.39	0.40	0.31	0.33	0.54	0.28	0.35
Cadmium	70	mg/kg	0.37	0.55	0.51	0.41	0.43	0.45	0.42	0.50	0.36	0.56	0.26	0.38	0.39	0.30	0.26
Chromium	100	mg/kg	18	16	15	15	14	15	16	15	16	15	13	17	25	16	18
Lead	200	mg/kg	63	51	57	34	74	69	56	49	53	50	18	31	20	24	15
Mercury	20	mg/kg	0.039	0.048	0.038	0.032	0.050	0.041	0.040	0.35	0.043	0.031	ND(0.027)	0.034	0.040	0.073	ND(0.031)
Nickel	600	mg/kg	13	14	12	12	11	12	11	10	13	12	11	14	18	11	13
Selenium	400	mg/kg	ND(3.7)	ND(3.8)	ND(3.6)	ND(3.7)	ND(3.6)	ND(3.7)	ND(3.7)	ND(3.8)	ND(3.8)	ND(3.8)	ND(3.6)	ND(3.7)	ND(4.0)	ND(3.8)	ND(3.9)
Silver	100	mg/kg	ND(0.37)	ND(0.38)	ND(0.36)	ND(0.37)	ND(0.36)	ND(0.37)	ND(0.37)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.36)	ND(0.37)	ND(0.40)	ND(0.38)	ND(0.39)
Thallium	8	mg/kg	ND(1.8)	ND(1.9)	ND(1.8)	ND(1.9)	ND(1.8)	ND(1.8)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.8)	ND(1.8)	ND(2.0)	ND(1.9)	ND(2.0)
Vanadium	400	mg/kg	26	25	21	23	20	21	21	18	25	24	22	26	32	19	23
Zinc	1000	mg/kg	60	66	46	41	52	55	50	57	51	46	32	42	48	48	37
Metals, TCLP																	
Lead	5*	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Polychlorinated Biphenyls (PCBs)																	
Aroclor 1254	1	mg/kg	ND(0.087)	ND(0.090)	ND(0.084)	ND(0.089)	ND(0.086)	ND(0.084)	ND(0.088)	ND(0.094)	ND(0.087)	ND(0.089)	ND(0.083)	ND(0.088)	ND(0.094)	ND(0.085)	ND(0.094)
Total PCBs	1	mg/kg	ND(0.087)	ND(0.090)	ND(0.084)	ND(0.089)	ND(0.086)	ND(0.084)	ND(0.088)	ND(0.094)	ND(0.087)	ND(0.089)	ND(0.083)	ND(0.088)	ND(0.094)	ND(0.085)	ND(0.094)
General Chemistry																	
Ignitability	NSE	present/ absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent
pH	NSE	pH Units	8.4	8.6	7.7	7.9	7.9	8.0	8.0	7.8	8.0	7.7	7.7	8.1	7.8	7.3	7.7
Reactivity Cyanide	NSE	mg/kg	ND(4.0)	ND(3.9)	ND(3.9)	ND(4.0)	ND(3.9)	ND(3.9)	ND(3.9)	ND(4.0)	ND(3.9)	ND(3.9)	ND(4.0)	ND(3.9)	ND(4.0)	ND(4.0)	ND(4.0)
Reactivity Sulfide	NSE	mg/kg	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(19)	ND(19)	ND(20)	ND(20)	ND(19)	ND(20)	ND(19)	ND(20)	ND(20)	ND(20)
Solids, Total	NSE	%	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(19)	ND(19)	ND(20)	ND(20)	ND(19)	ND(20)	ND(19)	82.4	88.1	82.2
Specific Conductance	2000	umhos/cm	19	21	15	11	8.1	16	7.5	15	13	11	14	23	16	9.3	17

Notes:
- mg/kg=milligram per kilogram; uhoms/cm=microohms per centimeter
- Reportable Concentrations (RCS-1 & RCS-2) taken from the Massachusetts Contingency Plan (MCP) 310 CMR 40.0974(2) dated April 2014
- * Regulatory Standard
- ND = Not Detected above laboratory reporting limits shown in parenthesis
- -- = Not Analyzed
- NSE = No Standard Exists
- Highlighted values exceed applicable MCP RCS-1 Reportable Concentration
- Full analytical results are detailed in the laboratory analytical report

Table 3B - Summary of 32,000 CY Stockpile Additional Soil Characterization Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Location ID	REPORTABLE CONCENTRATION RCS-1	Units	B4	C5	C6	C6	C6	C6	C6	D3	D6
Sample ID			TP-B4 (5-10)_TCLP	TP-C5 (5-10)_TPH 1	TP-C6 (5-10)_TPH1	TP-C6 (5-10)_TPH2	TP-C6 (5-10)_TPH3	TP-C6 (5-10)_TPH4	TP-C6 (5-10)_TPH 5	TP-D3 (5-10)_TCLP	TP-D6 (5-10)_TCLP
Depth Interval (ft)			5-10	5-10	5-10	5-10	5-10	5-10	5-10	5-10	5-10
Sample Date			2/26/2021	3/8/2021	2/26/2021	2/26/2021	2/26/2021	2/26/2021	3/8/2021	2/26/2021	2/26/2021
Lab ID			21B1166-01	21C0390-10	21B1166-06	21B1166-07	21B1166-08	21B1166-09	21C0390-09	21B1166-05	21B1166-02
Total Petroleum Hydrocarbons (TPH)											
TPH	1000	mg/kg	--	240	530	520	560	89	230	--	--
Metals, TCLP											
Lead	NSE	mg/L	0.25	--	--	--	--	--	--	0.19	ND(0.10)

Location ID	REPORTABLE CONCENTRATION RCS-1	Units	E7	E7	E7	E7	E7	E7	E7	E7	E7	E7
Sample ID			TP-E7 (0-5)_TCLP	TP-E7 (0-5)_N	TP-E7 (0-5)_E	TP-E7 (0-5)_S	TP-E7 (0-5)_W	TP-E7 (5-10)_TCLP	TP-E7 (5-10)_N	TP-E7 (5-10)_E	TP-E7 (5-10)_S	TP-E7 (5-10)_W
Depth Interval (ft)			0-5	0-5	0-5	0-5	0-5	5-10	5-10	5-10	5-10	5-10
Sample Date			2/26/2021	3/8/2021	3/8/2021	3/8/2021	3/8/2021	2/26/2021	3/8/2021	3/8/2021	3/8/2021	3/8/2021
Lab ID			21B1166-03	21C0390-01, 21C0391-01	21C0390-03, 21C0391-03	21C0390-05, 21C0391-05	21C0390-07	21B1166-04	21C0390-02, 21C0391-02	21C0390-04	21C0390-06, 21C0391-06	21C0390-08, 21C0391-08
Total Petroleum Hydrocarbons (TPH)												
TPH	1000	mg/kg	--	--	--	--	--	--	--	--	--	--
Metals, TCLP												
Lead	NSE	mg/L	10	0.12	1.0	ND(0.10)	ND(0.10)	12	4.4	ND(0.10)	ND(0.10)	ND(0.10)

Notes:
- mg/kg=milligram per kilogram; mg/L=milligrams per Liter; µmhos/cm=microohms per centimeter
- Reportable Concentrations (RCS-1) taken from the Massachusetts Contingency Plan (MCP) 310 CMR 40.0974(2) dated April 2014
- ND = Not Detected above laboratory reporting limits shown in parenthesis
- -- = Not Analyzed
- NSE = No Standard Exists
- Highlighted values exceeds the applicable Cleanup Criteria
- Full analytical results, including QA/QC information and data flags, are detailed in the laboratory analytical report

Table 3C - Summary of 32,000 CY Sub-Stockpile Confirmatory Sample Analytical Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Location ID	REPORTABLE CONCENTRATION RCS-1	Units	A5	C1	C3	C6	D1	D6	E3	E7	F3
Sample ID			TP-A5-CONF	TP-C1-CONF	TP-C3-CONF	TP-C6-CONF	TP-D1-CONF	TP-D6-CONF	TP-E3-CONF	TP-E7-CONF	TP-F3-CONF
Sample Date			4/20/2021	4/9/2021	4/20/2021	4/19/2021	4/9/2021	4/19/2021	4/19/2021	4/26/2021	4/19/2021
Lab ID			21D1038-01	21D0510-02	21D1038-02	21D0977-04	21D0510-01	21D0977-03	21D0977-01	21D1355-01	21D0977-02
Polyaromatic Hydrocarbons											
2-Methylnaphthalene	0.7	mg/kg	ND(0.18)	ND(0.95)	ND(0.18)	ND(0.18)	ND(0.91)	ND(0.20)	ND(0.18)	--	ND(0.18)
Acenaphthene	4	mg/kg	ND(0.18)	ND(0.95)	ND(0.18)	ND(0.18)	ND(0.91)	ND(0.20)	ND(0.18)	--	ND(0.18)
Acenaphthylene	1	mg/kg	ND(0.18)	ND(0.95)	ND(0.18)	ND(0.18)	ND(0.91)	ND(0.20)	ND(0.18)	--	ND(0.18)
Anthracene	1000	mg/kg	ND(0.18)	ND(0.95)	ND(0.18)	ND(0.18)	ND(0.91)	ND(0.20)	ND(0.18)	--	ND(0.18)
Benzo(a)Anthracene	7	mg/kg	ND(0.18)	1.2	ND(0.18)	ND(0.18)	1.2	0.31	ND(0.18)	--	ND(0.18)
Benzo(a)Pyrene	2	mg/kg	ND(0.18)	1.2	ND(0.18)	ND(0.18)	1.3	0.28	ND(0.18)	--	ND(0.18)
Benzo(b)Fluoranthene	7	mg/kg	ND(0.18)	1.4	ND(0.18)	ND(0.18)	1.4	0.33	ND(0.18)	--	ND(0.18)
Benzo(g,h,i)Perylene	1000	mg/kg	ND(0.18)	ND(0.95)	ND(0.18)	ND(0.18)	1.0	ND(0.20)	ND(0.18)	--	ND(0.18)
Benzo(k)Fluoranthene	70	mg/kg	ND(0.18)	ND(0.95)	ND(0.18)	ND(0.18)	ND(0.91)	ND(0.20)	ND(0.18)	--	ND(0.18)
Chrysene	70	mg/kg	ND(0.18)	1.2	ND(0.18)	ND(0.18)	1.2	0.28	ND(0.18)	--	ND(0.18)
Dibenzo(a,h)Anthracene	0.7	mg/kg	ND(0.18)	ND(0.95)	ND(0.18)	ND(0.18)	ND(0.91)	ND(0.20)	ND(0.18)	--	ND(0.18)
Fluoranthene	1000	mg/kg	ND(0.18)	1.8	ND(0.18)	0.26	1.9	0.53	ND(0.18)	--	ND(0.18)
Fluorene	1000	mg/kg	ND(0.18)	ND(0.95)	ND(0.18)	ND(0.18)	ND(0.91)	ND(0.20)	ND(0.18)	--	ND(0.18)
Indeno(1,2,3-cd)Pyrene	7	mg/kg	ND(0.18)	ND(0.95)	ND(0.18)	ND(0.18)	1.0	ND(0.20)	ND(0.18)	--	ND(0.18)
Naphthalene	4	mg/kg	ND(0.18)	ND(0.95)	ND(0.18)	ND(0.18)	ND(0.91)	ND(0.20)	ND(0.18)	--	ND(0.18)
Phenanthrene	10	mg/kg	ND(0.18)	ND(0.95)	ND(0.18)	0.19	0.93	0.29	ND(0.18)	--	ND(0.18)
Pyrene	1000	mg/kg	ND(0.18)	2.5	ND(0.18)	0.33	2.6	0.64	ND(0.18)	--	ND(0.18)
Metals											
Lead	200	mg/kg	--	--	--	--	--	--	--	3.4	--
General Chemistry											
Solids, Total	NSE	percent	97.0	89.5	96.9	96.5	93.6	86.3	95.9	95.9	95.6

Notes:
- mg/kg=milligram per kilogram
- Reportable Concentrations (RCS-1) taken from the Massachusetts Contingency Plan (MCP) 310 CMR 40.1600 dated April 2014
- ND = Not Detected above laboratory reporting limits shown in parenthesis
- -- = Not Analyzed
- NSE = No Standard Exists
- Full analytical results, including QA/QC information and data flags, are detailed in the laboratory analytical report

Table 3D: Summary of 32,000 CY Stockpile Waste Characterization Analytical Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Location ID	MCP RCS-1	Units	V-301	V-302
Sample Date			6/17/2021	6/17/2021
Sample ID			V-301-SP-20210617	V-302-20210617
Lab ID			21F1036-01	21F1036-02
Extractable Petroleum Hydrocarbons (EPH) with target Polynuclear Aromatic Hydrocarbons (PAHs)				
C9-C18 Aliphatic Hydrocarbons (adjusted)	1000	mg/kg	ND(22)	ND(56)
C11-C22 Aromatic Hydrocarbons (adjusted)	1000	mg/kg	53	170
C19-C36 Aliphatics (adjusted)	3000	mg/kg	53	130
Volatile Organic Compounds (VOCs)				
1,1,1,2-Tetrachloroethane	0.1	mg/kg	ND(0.0020)	ND(0.0018)
1,1,1-Trichloroethane (1,1,1-TCA)	30	mg/kg	ND(0.0020)	ND(0.0018)
1,1,2-Trichloroethane	0.1	mg/kg	ND(0.0020)	ND(0.0018)
1,1-Dichloroethane (1,1-DCA)	0.4	mg/kg	ND(0.0020)	ND(0.0018)
1,1-Dichloroethene (1,1-DCE)	3	mg/kg	ND(0.0039)	ND(0.0035)
1,1-Dichloropropene	NSE	mg/kg	ND(0.0020)	ND(0.0018)
1,2,3-Trichlorobenzene	NSE	mg/kg	ND(0.0020)	ND(0.0018)
1,2,3-Trichloropropane	100	mg/kg	ND(0.0020)	ND(0.0018)
1,2,4-Trichlorobenzene	2	mg/kg	ND(0.0020)	ND(0.0018)
1,2,4-Trimethylbenzene	1000	mg/kg	ND(0.0020)	ND(0.0018)
1,2-Dibromo-3-Chloropropane	10	mg/kg	ND(0.0020)	ND(0.0018)
1,2-Dibromoethane	0.1	mg/kg	ND(0.00098)	ND(0.00088)
1,2-Dichlorobenzene	9	mg/kg	ND(0.0020)	ND(0.0018)
1,2-Dichloroethane (1,2-DCA)	0.1	mg/kg	ND(0.0020)	ND(0.0018)
1,2-Dichloroethylene, cis (1,2-DCE, cis)	0.1	mg/kg	ND(0.0020)	ND(0.0018)
1,2-Dichloroethylene, trans (1,2-DCE, trans)	1	mg/kg	ND(0.0020)	ND(0.0018)
1,2-Dichloropropane	0.1	mg/kg	ND(0.0020)	ND(0.0018)
1,3,5-Trimethylbenzene	10	mg/kg	ND(0.0020)	ND(0.0018)
1,3-Dichlorobenzene (1,3-DCB)	3	mg/kg	ND(0.0020)	ND(0.0018)
1,3-Dichloropropane	500	mg/kg	ND(0.00098)	ND(0.00088)
1,3-Dichloropropene, cis	0.01	mg/kg	ND(0.00098)	ND(0.00088)
1,3-Dichloropropene, trans	0.01	mg/kg	ND(0.00098)	ND(0.00088)
1,4-Dichlorobenzene	0.7	mg/kg	ND(0.0020)	ND(0.0018)
1,4-Dioxane	0.2	mg/kg	ND(0.098)	ND(0.088)
2,2-Dichloropropane	NSE	mg/kg	ND(0.0020)	ND(0.0018)
2-Hexanone	100	mg/kg	ND(0.020)	ND(0.018)
Acetone	6	mg/kg	ND(0.098)	ND(0.088)
Benzene	2	mg/kg	ND(0.0020)	ND(0.0018)
Bromobenzene	100	mg/kg	ND(0.0020)	ND(0.0018)
Bromochloromethane (Chlorobromomethane)	NSE	mg/kg	ND(0.0020)	ND(0.0018)
Bromodichloromethane	0.1	mg/kg	ND(0.0020)	ND(0.0018)
Bromoform	0.1	mg/kg	ND(0.0020)	ND(0.0018)
Bromomethane	0.5	mg/kg	ND(0.0098)	ND(0.0088)
Carbon Disulfide	100	mg/kg	ND(0.0059)	ND(0.0053)
Carbon Tetrachloride	5	mg/kg	ND(0.0020)	ND(0.0018)
Chlorobenzene	1	mg/kg	ND(0.0020)	ND(0.0018)
Chloroethane	100	mg/kg	ND(0.0098)	ND(0.0088)
Chloroform	0.2	mg/kg	ND(0.0039)	ND(0.0035)
Chloromethane	100	mg/kg	ND(0.0098)	ND(0.0088)
Dibromochloromethane	0.005	mg/kg	ND(0.00098)	ND(0.00088)
Dibromomethane	500	mg/kg	ND(0.0020)	ND(0.0018)
Dichlorodifluoromethane	1000	mg/kg	ND(0.0098)	ND(0.0088)
Ethyl Ether	100	mg/kg	ND(0.0098)	ND(0.0088)
Ethylbenzene	40	mg/kg	ND(0.0020)	ND(0.0018)
Ethyl-Tert-Butyl-Ether (Tert-Butylethyl Ether)	NSE	mg/kg	ND(0.00098)	ND(0.00088)
Hexachlorobutadiene	30	mg/kg	ND(0.0020)	ND(0.0018)
Isopropyl Benzene	1000	mg/kg	ND(0.0020)	ND(0.0018)
Isopropyl Ether	100	mg/kg	ND(0.00098)	ND(0.00088)
Methyl Ethyl Ketone (MEK)	4	mg/kg	ND(0.039)	ND(0.035)
Methyl Isobutyl Ketone (MIBK)	0.4	mg/kg	ND(0.020)	ND(0.018)
Methyl Tert-Butyl Ether	0.1	mg/kg	ND(0.0039)	ND(0.0035)
Methylene Chloride	0.1	mg/kg	ND(0.0098)	ND(0.0088)
Naphthalene	4	mg/kg	ND(0.0039)	ND(0.0035)
n-Butylbenzene	NSE	mg/kg	ND(0.0020)	ND(0.0018)
o-Chlorotoluene	100	mg/kg	ND(0.0020)	ND(0.0018)
o-Xylene	100	mg/kg	ND(0.0020)	ND(0.0018)
p/m-Xylene	100	mg/kg	ND(0.0039)	ND(0.0035)
p-Chlorotoluene (4-Chlorotoluene)	NSE	mg/kg	ND(0.0020)	ND(0.0018)
p-Cymene	100	mg/kg	ND(0.0020)	ND(0.0018)
Propylbenzene	100	mg/kg	ND(0.0020)	ND(0.0018)
Sec-Butylbenzene	NSE	mg/kg	ND(0.0020)	ND(0.0018)
Styrene	3	mg/kg	ND(0.0020)	ND(0.0018)
Tert-Butylbenzene	100	mg/kg	ND(0.0020)	ND(0.0018)
Tertiary-Amyl Methyl Ether (TAME)	NSE	mg/kg	ND(0.00098)	ND(0.00088)
Tetrachloroethane	0.005	mg/kg	ND(0.00098)	ND(0.00088)
Tetrachloroethylene (PCE)	1	mg/kg	ND(0.0020)	ND(0.0018)
Tetrahydrofuran	500	mg/kg	ND(0.0098)	ND(0.0088)
Toluene	30	mg/kg	ND(0.0020)	ND(0.0018)
Trichloroethylene (TCE)	0.3	mg/kg	ND(0.0020)	ND(0.0018)
Trichlorofluoromethane	1000	mg/kg	ND(0.0098)	ND(0.0088)
Vinyl Chloride	0.7	mg/kg	ND(0.0098)	ND(0.0088)

Table 3D: Summary of 32,000 CY Stockpile Waste Characterization Analytical Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Location ID	MCP RCS-1	Units	V-301	V-302
Sample Date			6/17/2021	6/17/2021
Sample ID			V-301-SP-20210617	V-302-20210617
Lab ID			21F1036-01	21F1036-02
Semivolatile Organic Compounds (SVOCs)				
1,2,4-Trichlorobenzene	2	mg/kg	ND(0.37)	ND(0.38)
1,2-Dichlorobenzene	9	mg/kg	ND(0.37)	ND(0.38)
1,2-Diphenylhydrazine	50	mg/kg	ND(0.37)	ND(0.38)
1,3-Dichlorobenzene (1,3-DCB)	3	mg/kg	ND(0.37)	ND(0.38)
1,4-Dichlorobenzene	0.7	mg/kg	ND(0.37)	ND(0.38)
2,4,5-Trichlorophenol	4	mg/kg	ND(0.37)	ND(0.38)
2,4,6-Trichlorophenol	0.7	mg/kg	ND(0.37)	ND(0.38)
2,4-Dichlorophenol	0.7	mg/kg	ND(0.37)	ND(0.38)
2,4-Dimethylphenol	0.7	mg/kg	ND(0.37)	ND(0.38)
2,4-Dinitrophenol	3	mg/kg	ND(0.73)	ND(0.74)
2,4-Dinitrotoluene	0.7	mg/kg	ND(0.37)	ND(0.38)
2,6-Dinitrotoluene	100	mg/kg	ND(0.37)	ND(0.38)
2-Chloronaphthalene	1000	mg/kg	ND(0.37)	ND(0.38)
2-Chlorophenol	0.7	mg/kg	ND(0.37)	ND(0.38)
2-Methylnaphthalene	0.7	mg/kg	ND(0.19)	1.8
2-Methylphenol (o-Cresol)	500	mg/kg	ND(0.37)	ND(0.38)
2-Nitrophenol (o-Nitrophenol)	100	mg/kg	ND(0.37)	ND(0.38)
3,3-Dichlorobenzidine	3	mg/kg	ND(0.19)	ND(0.19)
3-Methylphenol/4-Methylphenol	NSE	mg/kg	ND(0.37)	ND(0.38)
4-Bromophenyl Phenyl Ether	100	mg/kg	ND(0.37)	ND(0.38)
Acenaphthene	4	mg/kg	ND(0.19)	0.3
Acenaphthylene	1	mg/kg	ND(0.19)	0.81
Acetophenone	1000	mg/kg	ND(0.37)	ND(0.38)
Aniline	1000	mg/kg	ND(0.37)	ND(0.38)
Anthracene	1000	mg/kg	ND(0.19)	1
Benzo(a)Anthracene	7	mg/kg	ND(0.19)	2.6
Benzo(a)Pyrene	2	mg/kg	ND(0.19)	2.1
Benzo(b)Fluoranthene	7	mg/kg	ND(0.19)	1.8
Benzo(g,h,i)Perylene	1000	mg/kg	ND(0.19)	1.2
Benzo(k)Fluoranthene	70	mg/kg	ND(0.19)	0.61
Bis (2-Chloroethyl) Ether	0.7	mg/kg	ND(0.37)	ND(0.38)
Bis(2-Ethylhexyl)Phthalate	90	mg/kg	ND(0.37)	ND(0.38)
Butyl Benzyl Phthalate	100	mg/kg	ND(0.37)	ND(0.38)
Chrysene	70	mg/kg	ND(0.19)	3.2
Dibenzo(a,h)Anthracene	0.7	mg/kg	ND(0.19)	0.36
Dibenzofuran	100	mg/kg	ND(0.37)	ND(0.38)
Dichloroisopropyl Ether	0.7	mg/kg	ND(0.37)	ND(0.38)
Dichloromethoxy Ethane	500	mg/kg	ND(0.37)	ND(0.38)
Diethyl Phthalate	10	mg/kg	ND(0.37)	ND(0.38)
Dimethyl Phthalate	0.7	mg/kg	ND(0.37)	ND(0.38)
Fluoranthene	1000	mg/kg	ND(0.19)	3.4
Fluorene	1000	mg/kg	ND(0.19)	1.3
Hexachlorobenzene	0.7	mg/kg	ND(0.37)	ND(0.38)
Hexachlorobutadiene	30	mg/kg	ND(0.37)	ND(0.38)
Hexachloroethane	0.7	mg/kg	ND(0.37)	ND(0.38)
Indeno(1,2,3-cd)Pyrene	7	mg/kg	ND(0.19)	1.2
Isophorone	100	mg/kg	ND(0.37)	ND(0.38)
Naphthalene	4	mg/kg	ND(0.19)	1.1
n-Butyl Phthalate	50	mg/kg	ND(0.37)	ND(0.38)
n-Dioctyl Phthalate	1000	mg/kg	ND(0.37)	ND(0.38)
Nitrobenzene	500	mg/kg	ND(0.37)	ND(0.38)
p-Chloroaniline	1	mg/kg	ND(0.73)	ND(0.74)
Pentachlorophenol	3	mg/kg	ND(0.37)	ND(0.38)
Phenanthrene	10	mg/kg	ND(0.19)	6.4
Phenol	1	mg/kg	ND(0.37)	ND(0.38)
p-Nitrophenol	100	mg/kg	ND(0.73)	ND(0.74)
Pyrene	1000	mg/kg	ND(0.19)	7.8
Pyridine	500	mg/kg	ND(0.37)	ND(0.38)
Total SVOCs	NSE	mg/kg	ND	36.98
Metals				
Antimony	20	mg/kg	ND(1.8)	ND(1.8)
Arsenic	20	mg/kg	6.2	8.2
Barium	1000	mg/kg	23	33
Beryllium	90	mg/kg	0.34	0.30
Cadmium	70	mg/kg	ND(0.37)	ND(0.37)
Chromium	100	mg/kg	11	14
Lead	200	mg/kg	28	22
Mercury	20	mg/kg	ND(0.027)	ND(0.028)
Nickel	600	mg/kg	8.3	11
Selenium	400	mg/kg	ND(3.7)	ND(3.7)
Silver	100	mg/kg	ND(0.37)	ND(0.37)
Thallium	8	mg/kg	ND(1.8)	ND(1.8)
Vanadium	400	mg/kg	17	21
Zinc	1000	mg/kg	26	55

Table 3D: Summary of 32,000 CY Stockpile Waste Characterization Analytical Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Location ID	MCP RCS-1	Units	V-301	V-302
Sample Date			6/17/2021	6/17/2021
Sample ID			V-301-SP-20210617	V-302-20210617
Lab ID			21F1036-01	21F1036-02
Polychlorinated Biphenyls (PCBs)				
Aroclor 1016	1	mg/kg	ND(0.089)	ND(0.090)
Aroclor 1221	1	mg/kg	ND(0.089)	ND(0.090)
Aroclor 1232	1	mg/kg	ND(0.089)	ND(0.090)
Aroclor 1242	1	mg/kg	ND(0.089)	ND(0.090)
Aroclor 1248	1	mg/kg	ND(0.089)	ND(0.090)
Aroclor 1254	1	mg/kg	ND(0.089)	ND(0.090)
Aroclor 1260	1	mg/kg	ND(0.089)	ND(0.090)
Aroclor 1262	1	mg/kg	ND(0.089)	ND(0.090)
Aroclor 1268	1	mg/kg	ND(0.089)	ND(0.090)
General Chemistry				
Ignitability	NSE	)resent/absen	absent	absent
pH	NSE	S.U.	6.4	7.9
Reactivity Cyanide	NSE	mg/kg	ND(3.9)	ND(3.9)
Reactivity Sulfide	NSE	mg/kg	ND(20)	ND(20)
Solids, Total	NSE	percent	90.1	88.8
Specific Conductance	NSE	µmhos/cm	4.8	7.5

Notes:
- mg/kg=milligram per kilogram; mg/L=milligrams per Liter; µmhos/cm=microohms per centimeter
- Reportable Concentrations (RCS-1) taken from the Massachusetts Contingency Plan (MCP) 310 CMR 401600 dated April 2014
- ND = Not Detected above laboratory reporting limits shown in parenthesis
- -- = Not Analyzed
- NSE = No Standard Exists
- Full analytical results, including QA/QC information and data flags, are detailed in the laboratory analytical report

Table 4A
Summary of Firing Range Soil Characterization Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Sample ID	RCS-1	Units	V-201	V-202	V-203	V-204	V-205	V-206	FIRING RANGE
Sample Date			4/11/2019	4/11/2019	4/11/2019	4/11/2019	4/11/2019	4/11/2019	4/11/2019
Metals									
Antimony	20	mg/kg	41	140	ND(1.7)	3.3	5.1	140	290
Arsenic	20	mg/kg	--	--	--	--	--	--	9.2
Barium	1000	mg/kg	--	--	--	--	--	--	13
Beryllium	90	mg/kg	--	--	--	--	--	--	ND(0.17)
Cadmium	70	mg/kg	--	--	--	--	--	--	0.40
Chromium	100	mg/kg	--	--	--	--	--	--	4.3
Copper	1000	mg/kg	4200	4200	120	74	1000	7100	--
Lead	200	mg/kg	4000	13000	46	290	630	24000	24000
Mercury	20	mg/kg	--	--	--	--	--	--	ND(0.025)
Nickel	600	mg/kg	--	--	--	--	--	--	3.6
Selenium	400	mg/kg	--	--	--	--	--	--	ND(3.3)
Silver	100	mg/kg	--	--	--	--	--	--	1.2
Thallium	8	mg/kg	--	--	--	--	--	--	ND(1.7)
Tungsten	NSE	mg/kg	ND(0.4)	14	5	ND(0.4)	ND(0.4)	ND(0.3)	--
Vanadium	400	mg/kg	--	--	--	--	--	--	7.7
Zinc	1000	mg/kg	18	29	27	37	23	69	46
Metals, TCLP									
Lead	5*	mg/l	180	360	7.5	8.3	48	830	--
Total Petroleum Hydrocarbons (TPH)									
TPH	1000	mg/kg	--	--	--	--	--	--	27
Volatile Organic Compounds (VOCs)									
Total VOCs	NSE	mg/kg	--	--	--	--	--	--	ND(0.17)
Semivolatile Organic Compounds (SVOCs)									
Total SVOCs	NSE	mg/kg	--	--	--	--	--	--	ND(0.68)
Polychlorinated Biphenyls (PCBs)									
Total PCBs	1	mg/kg	--	--	--	--	--	--	ND(0.081)

Table 4A
Summary of Firing Range Soil Characterization Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Sample ID	RCS-1	Units	V-201	V-202	V-203	V-204	V-205	V-206	FIRING RANGE
Sample Date			4/11/2019	4/11/2019	4/11/2019	4/11/2019	4/11/2019	4/11/2019	4/11/2019
General Chemistry									
Ignitability	NSE	present/ absent	--	--	--	--	--	--	absent
pH	5-9	pH Units	--	--	--	--	--	--	6.6
Reactivity Cyanide	NSE	mg/kg	--	--	--	--	--	--	ND(3.9)
Reactivity Sulfide	NSE	mg/kg	--	--	--	--	--	--	20
Solids, Total	NSE	%	93.3	95.4	95.3	92.1	92.3	92.9	96.4
Specific Conductance	2000	umhos/cm	--	--	--	--	--	--	2.0

Notes:

- mg/kg=milligram per kilogram; mg/l=milligram per liter; uhoms/cm= microohms per centimeter
- Reportable Concentrations (RCS-1) taken from the Massachusetts Contingency Plan (MCP) 310 CMR 40.0974(2) dated April 2014
- * = MCP RCS-1 does not apply. Regulatory concentration taken from the Resource Conservation and Recovery Act (RCRA) hazardous waste regulations 40 CFR Part 261 Subpart C.
- ND = Not Detected above laboratory reporting limits shown in parenthesis
- -- = Not Analyzed
- NSE = No Standard Exists
- Highlighted values exceeds the applicable Reportable Concentration (*regulatory concentration)
- Full analytical results, including QA/QC information and data flags, are detailed in the laboratory analytical report

Table 4B - Summary of Firing Range Vertical Delineation Soil Analytical Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Sample ID	Reportable Concentration RCS-1	Units	V-301 (2-4)	V-302 (2-4)	V-303 (2-4)	V-304 (2-4)	V-305 (2-4)	V-306 (2-4)	V-307 (2-4)	V-308 (2-4)	V-309 (0-2)	V-310 (0-2)	V-311 (0-2)	V-312 (2-4)	V-313 (2-4)	V-314 (2-4)	V-402 (2-4)
Sample Date			5/8/2019	5/8/2019	5/8/2019	5/8/2019	5/8/2019	5/8/2019	5/8/2019	5/8/2019	5/8/2019	5/8/2019	5/8/2019	5/8/2019	5/8/2019	5/8/2019	4/12/2021
Depth Interval (ft)			2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	0-2	0-2	0-2	2-4	2-4	2-4	2-4
Metals																	
Antimony	20	mg/kg	ND(1.7)	ND(1.8)	ND(1.8)	ND(1.7)	ND(1.7)	ND(1.8)	ND(1.8)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.9)	ND(1.8)	ND(1.8)	--
Copper	1000	mg/kg	13	22	45	13	37	31	28	43	4.2	400	5.9	20	24	32	--
Lead	200	mg/kg	5.0	31	28	12	22	25	57	22	5.9	140	8.8	150	86	55	23
Metals, TCLP																	
Lead	5*	mg/L	--	--	--	--	--	--	--	--	--	20	--	0.099	--	--	--

Notes:
- mg/kg=milligram per kilogram; mg/L=milligram per liter; uhoms/cm=microohms per centimeter
- Reportable Concentrations (RCS-1 & RCS-2) taken from the Massachusetts Contingency Plan (MCP) 310 CMR 40.0974(2) dated April 2014
- * Regulatory Standard
- ND = Not Detected above laboratory reporting limits shown in parenthesis
- -- = Not Analyzed
- NSE = No Standard Exists
- Highlighted values exceed applicable MCP RCS-1 Reportable Concentration
- Underlined values exceed applicable MCP RCS-2 Reportable Concentration
- Full analytical results are detailed in the laboratory analytical report

Table 4C - Summary of Firing Range Post-Stabilization Confirmatory Analytical Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Sample ID	RCRA Action Level	Units	#1 Firing Range	#2 Firing Range	#3 Firing Range	#4 Firing Range	#5 Firing Range	#6 Firing Range	#7 Firing Range	#8 Firing Range	#9 Firing Range
Sample Date			4/12/2021	4/12/2021	4/12/2021	4/12/2021	4/12/2021	4/12/2021	5/4/2021	5/4/2021	5/4/2021
Lab ID			21D0381-01	21D0381-02	21D0381-03	21D0381-04	21D0381-05	21D0381-06	21E0118-01	21E0118-02	21E0118-03
Metals, TCLP											
Lead	5	mg/L	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)

Sample ID	RCRA Action Level	Units	#10 Firing Range	#11 Firing Range	#1 Firing Range	#1 Cell E-7	#2 Cell E-7
Sample Date			5/4/2021	5/4/2021	5/14/2021	4/13/2021	4/13/2021
Lab ID			21E0118-04	21E0118-05	21E0571	21D0382-01	21D0382-02
Metals, TCLP							
Lead	5	mg/L	ND(0.050)	ND(0.050)	0.107	0.093	ND(0.050)

Notes:
- mg/L=milligram per Liter
- Resource Conservation and Recovery Act (RCRA) Action Level taken from RCRA hazardous waste regulations 40 CFR Part 261 Subpart C.
- ND = Not Detected above laboratory reporting limits shown in parenthesis
- Soil samples collected by United Retek Corp. of Bellingham, Massachusetts
- Full analytical results, including QA/QC information and data flags, are detailed in the laboratory analytical report

Table 4D - Summary of Firing Range Horizontal Delineation Soil Analytical Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Sample ID	REPORTABLE CONCENTRATION RCS-1	RCRA Action Level	Units	V-401-FR-CONF-W	V-402-FR-CONF-W	V-403-FR-CONF-W	V-404-FR-CONF-N	V-405-FR-CONF-N	V-406-FR-CONF-N	V-407-FR-CONF-E	V-408-FR-CONF-S	V-409-FR-CONF-S
Sample Date				5/4/2021	5/4/2021	5/4/2021	5/4/2021	5/4/2021	5/4/2021	5/4/2021	5/4/2021	5/4/2021
Lab ID				21E0205-01	21E0205-02	21E0205-03	21E0205-04	21E0205-05	21E0205-06	21E0205-07	21E0205-08	21E0205-09
Metals				EXCAVATED								
Antimony	20	NSE	mg/kg	--	5.7	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)
Copper	1000	NSE	mg/kg	--	90	19	14	78	180	27	13	13
Lead	200	NSE	mg/kg	14000	310	70	110	21	90	28	17	63
Metals, TCLP												
Lead	NSE	5	mg/L	180	--	--	--	--	--	--	--	--

Sample ID	REPORTABLE CONCENTRATION RCS-1	RCRA Action Level	Units	V-410-FR-CONF-S	V-501-FR-N	V501-FR-CONF-N	V-502-FR-W	V502-FR-CONF-S	V-503-FR-S	V-505-FR-W
Sample Date				5/4/2021	5/10/2021	5/14/2021	5/10/2021	5/14/2021	5/10/2021	5/10/2021
Lab ID				21E0205-10	21E0503-01	21E0829-01	21E0503-05	21E0829-02	21E0503-04	21E0503-02
Metals					EXCAVATED		EXCAVATED		EXCAVATED	
Antimony	20	NSE	mg/kg	ND(1.8)	--	--	ND(1.8)	--	--	ND(1.8)
Copper	1000	NSE	mg/kg	47	--	--	39	--	--	23
Lead	200	NSE	mg/kg	33	220	71	99	27	280	56
Metals, TCLP										
Lead	NSE	5	mg/L	--	--	--	--	--	--	--

Notes:
- mg/kg=milligram per kilogram; mg/L=milligrams per Liter
- Reportable Concentrations (RCS-1) taken from the

Level taken from RCRA hazardous waste regulations
40 CFR Part 261 Subpart C.
- ND = Not Detected above laboratory reporting limits shown in parenthesis
- -- = Not Analyzed
- NSE = No Standard Exists
- Gray shading = soil associated with the sample was excavated and transported off-site for disposal
- Yellow highlighted values exceeds the applicable RCS-1 Reportable Concentration
- Full analytical results, including QA/QC information and data

Table 4E - Summary of Firing Range Waste Characterization Analytical Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Sample ID	MCP RCS-1	Units	V-401-DISP-FR	V-402-DISP-FR
Location ID			V-401	V-402
Sample Date			5/14/2021	5/14/2021
Lab ID			21E0828-01	21E0828-02
Total Petroleum Hydrocarbons (TPH)				
TPH	1000	mg/kg	530	68
Volatile Organic Compounds (VOCs)				
1,1,1,2-Tetrachloroethane	0.1	mg/kg	ND(0.0014)	ND(0.0015)
1,1,1-Trichloroethane (1,1,1-TCA)	30	mg/kg	ND(0.0014)	ND(0.0015)
1,1,2-Trichloroethane	0.1	mg/kg	ND(0.0014)	ND(0.0015)
1,1-Dichloroethane (1,1-DCA)	0.4	mg/kg	ND(0.0014)	ND(0.0015)
1,1-Dichloroethene (1,1-DCE)	3	mg/kg	ND(0.0028)	ND(0.0030)
1,1-Dichloropropene	NSE	mg/kg	ND(0.0014)	ND(0.0015)
1,2,3-Trichlorobenzene	NSE	mg/kg	ND(0.0014)	ND(0.0015)
1,2,3-Trichloropropane	100	mg/kg	ND(0.0014)	ND(0.0015)
1,2,4-Trichlorobenzene	2	mg/kg	ND(0.0014)	ND(0.0015)
1,2,4-Trimethylbenzene	1000	mg/kg	ND(0.0014)	ND(0.0015)
1,2-Dibromo-3-Chloropropane	10	mg/kg	ND(0.0014)	ND(0.0015)
1,2-Dibromoethane	0.1	mg/kg	ND(0.00070)	ND(0.00076)
1,2-Dichlorobenzene	9	mg/kg	ND(0.0014)	ND(0.0015)
1,2-Dichloroethane (1,2-DCA)	0.1	mg/kg	ND(0.0014)	ND(0.0015)
1,2-Dichloroethylene, cis (1,2-DCE, cis)	0.1	mg/kg	ND(0.0014)	ND(0.0015)
1,2-Dichloroethylene, trans (1,2-DCE, trans)	1	mg/kg	ND(0.0014)	ND(0.0015)
1,2-Dichloropropane	0.1	mg/kg	ND(0.0014)	ND(0.0015)
1,3,5-Trimethylbenzene	10	mg/kg	ND(0.0014)	ND(0.0015)
1,3-Dichlorobenzene (1,3-DCB)	3	mg/kg	ND(0.0014)	ND(0.0015)
1,3-Dichloropropane	500	mg/kg	ND(0.00070)	ND(0.00076)
1,3-Dichloropropene, cis	0.01	mg/kg	ND(0.00070)	ND(0.00076)
1,3-Dichloropropene, trans	0.01	mg/kg	ND(0.00070)	ND(0.00076)
1,4-Dichlorobenzene	0.7	mg/kg	ND(0.0014)	ND(0.0015)
1,4-Dioxane	0.2	mg/kg	ND(0.070)	ND(0.076)
2,2-Dichloropropane	NSE	mg/kg	ND(0.0014)	ND(0.0015)
2-Hexanone	100	mg/kg	ND(0.014)	ND(0.015)
Acetone	6	mg/kg	ND(0.070)	ND(0.076)
Benzene	2	mg/kg	ND(0.0014)	ND(0.0015)
Bromobenzene	100	mg/kg	ND(0.0014)	ND(0.0015)
Bromochloromethane (Chlorobromomethane)	NSE	mg/kg	ND(0.0014)	ND(0.0015)
Bromodichloromethane	0.1	mg/kg	ND(0.0014)	ND(0.0015)
Bromoform	0.1	mg/kg	ND(0.0014)	ND(0.0015)
Bromomethane	0.5	mg/kg	ND(0.0070)	ND(0.0076)
Carbon Disulfide	100	mg/kg	ND(0.0042)	ND(0.0046)
Carbon Tetrachloride	5	mg/kg	ND(0.0014)	ND(0.0015)
Chlorobenzene	1	mg/kg	ND(0.0014)	ND(0.0015)
Chloroethane	100	mg/kg	ND(0.0070)	ND(0.0076)
Chloroform	0.2	mg/kg	ND(0.0028)	ND(0.0030)
Chloromethane	100	mg/kg	ND(0.0070)	ND(0.0076)
Dibromochloromethane	0.005	mg/kg	ND(0.00070)	ND(0.00076)
Dibromomethane	500	mg/kg	ND(0.0014)	ND(0.0015)
Dichlorodifluoromethane	1000	mg/kg	ND(0.0070)	ND(0.0076)
Ethyl Ether	100	mg/kg	ND(0.0070)	ND(0.0076)
Ethylbenzene	40	mg/kg	ND(0.0014)	ND(0.0015)
Ethyl-Tert-Butyl-Ether (Tert-Butylethyl Ether)	NSE	mg/kg	ND(0.00070)	ND(0.00076)
Hexachlorobutadiene	30	mg/kg	ND(0.0014)	ND(0.0015)
Isopropyl Benzene	1000	mg/kg	ND(0.0014)	ND(0.0015)
Isopropyl Ether	100	mg/kg	ND(0.00070)	ND(0.00076)
Methyl Ethyl Ketone (MEK)	4	mg/kg	ND(0.028)	ND(0.030)
Methyl Isobutyl Ketone (MIBK)	0.4	mg/kg	ND(0.014)	ND(0.015)
Methyl Tert-Butyl Ether	0.1	mg/kg	ND(0.0028)	ND(0.0030)
Methylene Chloride	0.1	mg/kg	ND(0.0070)	ND(0.0076)
Naphthalene	4	mg/kg	ND(0.0028)	ND(0.0030)
n-Butylbenzene	NSE	mg/kg	ND(0.0014)	ND(0.0015)
o-Chlorotoluene	100	mg/kg	ND(0.0014)	ND(0.0015)
o-Xylene	100	mg/kg	ND(0.0014)	ND(0.0015)
p/m-Xylene	100	mg/kg	ND(0.0028)	ND(0.0030)
p-Chlorotoluene (4-Chlorotoluene)	NSE	mg/kg	ND(0.0014)	ND(0.0015)
p-Cymene	100	mg/kg	ND(0.0014)	ND(0.0015)
Propylbenzene	100	mg/kg	ND(0.0014)	ND(0.0015)
Sec-Butylbenzene	NSE	mg/kg	ND(0.0014)	ND(0.0015)
Styrene	3	mg/kg	ND(0.0014)	ND(0.0015)
Tert-Butylbenzene	100	mg/kg	ND(0.0014)	ND(0.0015)
Tertiary-Amyl Methyl Ether (TAME)	NSE	mg/kg	ND(0.00070)	ND(0.00076)
Tetrachloroethane	0.005	mg/kg	ND(0.00070)	ND(0.00076)
Tetrachloroethylene (PCE)	1	mg/kg	ND(0.0014)	ND(0.0015)
Tetrahydrofuran	500	mg/kg	ND(0.0070)	ND(0.0076)
Toluene	30	mg/kg	ND(0.0014)	ND(0.0015)
Trichloroethylene (TCE)	0.3	mg/kg	ND(0.0014)	ND(0.0015)
Trichlorofluoromethane	1000	mg/kg	ND(0.0070)	ND(0.0076)
Vinyl Chloride	0.7	mg/kg	ND(0.0070)	ND(0.0076)

Table 4E - Summary of Firing Range Waste Characterization Analytical Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Sample ID	MCP RCS-1	Units	V-401-DISP-FR	V-402-DISP-FR
Location ID			V-401	V-402
Sample Date			5/14/2021	5/14/2021
Lab ID			21E0828-01	21E0828-02
Semivolatile Organic Compounds (SVOCs)				
1,2,4-Trichlorobenzene	2	mg/kg	ND(0.35)	ND(0.35)
1,2-Dichlorobenzene	9	mg/kg	ND(0.35)	ND(0.35)
1,2-Diphenylhydrazine	50	mg/kg	ND(0.35)	ND(0.35)
1,3-Dichlorobenzene (1,3-DCB)	3	mg/kg	ND(0.35)	ND(0.35)
1,4-Dichlorobenzene	0.7	mg/kg	ND(0.35)	ND(0.35)
2,4,5-Trichlorophenol	4	mg/kg	ND(0.35)	ND(0.35)
2,4,6-Trichlorophenol	0.7	mg/kg	ND(0.35)	ND(0.35)
2,4-Dichlorophenol	0.7	mg/kg	ND(0.35)	ND(0.35)
2,4-Dimethylphenol	0.7	mg/kg	ND(0.35)	ND(0.35)
2,4-Dinitrophenol	3	mg/kg	ND(0.69)	ND(0.69)
2,4-Dinitrotoluene	0.7	mg/kg	ND(0.35)	ND(0.35)
2,6-Dinitrotoluene	100	mg/kg	ND(0.35)	ND(0.35)
2-Chloronaphthalene	1000	mg/kg	ND(0.35)	ND(0.35)
2-Chlorophenol	0.7	mg/kg	ND(0.35)	ND(0.35)
2-Methylnaphthalene	0.7	mg/kg	ND(0.18)	ND(0.18)
2-Methylphenol (o-Cresol)	500	mg/kg	ND(0.35)	ND(0.35)
2-Nitrophenol (o-Nitrophenol)	100	mg/kg	ND(0.35)	ND(0.35)
3,3-Dichlorobenzidine	3	mg/kg	ND(0.18)	ND(0.18)
3-Methylphenol/4-Methylphenol	NSE	mg/kg	ND(0.35)	ND(0.35)
4-Bromophenyl Phenyl Ether	100	mg/kg	ND(0.35)	ND(0.35)
Acenaphthene	4	mg/kg	ND(0.18)	ND(0.18)
Acenaphthylene	1	mg/kg	ND(0.18)	ND(0.18)
Acetophenone	1000	mg/kg	ND(0.35)	ND(0.35)
Aniline	1000	mg/kg	ND(0.35)	ND(0.35)
Anthracene	1000	mg/kg	ND(0.18)	ND(0.18)
Benzo(a)Anthracene	7	mg/kg	0.26	ND(0.18)
Benzo(a)Pyrene	2	mg/kg	0.29	ND(0.18)
Benzo(b)Fluoranthene	7	mg/kg	0.30	ND(0.18)
Benzo(g,h,i)Perylene	1000	mg/kg	0.21	ND(0.18)
Benzo(k)Fluoranthene	70	mg/kg	ND(0.18)	ND(0.18)
Bis (2-Chloroethyl) Ether	0.7	mg/kg	ND(0.35)	ND(0.35)
Bis(2-Ethylhexyl)Phthalate	90	mg/kg	ND(0.35)	ND(0.35)
Butyl Benzyl Phthalate	100	mg/kg	ND(0.35)	ND(0.35)
Chrysene	70	mg/kg	0.28	ND(0.18)
Dibenzo(a,h)Anthracene	0.7	mg/kg	ND(0.18)	ND(0.18)
Dibenzofuran	100	mg/kg	ND(0.35)	ND(0.35)
Dichloroisopropyl Ether	0.7	mg/kg	ND(0.35)	ND(0.35)
Dichloromethoxy Ethane	500	mg/kg	ND(0.35)	ND(0.35)
Diethyl Phthalate	10	mg/kg	ND(0.35)	ND(0.35)
Dimethyl Phthalate	0.7	mg/kg	ND(0.35)	ND(0.35)
Fluoranthene	1000	mg/kg	0.40	ND(0.18)
Fluorene	1000	mg/kg	ND(0.18)	ND(0.18)
Hexachlorobenzene	0.7	mg/kg	ND(0.35)	ND(0.35)
Hexachlorobutadiene	30	mg/kg	ND(0.35)	ND(0.35)
Hexachloroethane	0.7	mg/kg	ND(0.35)	ND(0.35)
Indeno(1,2,3-cd)Pyrene	7	mg/kg	0.23	ND(0.18)
Isophorone	100	mg/kg	ND(0.35)	ND(0.35)
Naphthalene	4	mg/kg	ND(0.18)	ND(0.18)
n-Butyl Phthalate	50	mg/kg	ND(0.35)	ND(0.35)
n-Dioctyl Phthalate	1000	mg/kg	ND(0.35)	ND(0.35)
Nitrobenzene	500	mg/kg	ND(0.35)	ND(0.35)
p-Chloroaniline	1	mg/kg	ND(0.69)	ND(0.69)
Pentachlorophenol	3	mg/kg	ND(0.35)	ND(0.35)
Phenanthrene	10	mg/kg	0.21	ND(0.18)
Phenol	1	mg/kg	ND(0.35)	ND(0.35)
p-Nitrophenol	100	mg/kg	ND(0.69)	ND(0.69)
Pyrene	1000	mg/kg	0.62	ND(0.18)
Pyridine	500	mg/kg	ND(0.35)	ND(0.35)
Metals				
Arsenic	20	mg/kg	5.0	5.8
Barium	1000	mg/kg	18	22
Cadmium	70	mg/kg	ND(0.35)	0.40
Chromium	100	mg/kg	10	9.9
Lead	200	mg/kg	2800	55
Mercury	20	mg/kg	ND(0.026)	ND(0.026)
Nickel	600	mg/kg	--	--
Selenium	400	mg/kg	ND(3.5)	ND(3.5)
Silver	100	mg/kg	ND(0.35)	ND(0.35)

Table 4E - Summary of Firing Range Waste Characterization Analytical Results
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Sample ID	MCP RCS-1	Units	V-401-DISP-FR	V-402-DISP-FR
Location ID			V-401	V-402
Sample Date			5/14/2021	5/14/2021
Lab ID			21E0828-01	21E0828-02
Polychlorinated Biphenyls (PCBs)				
Aroclor 1016	1	mg/kg	ND(0.082)	ND(0.082)
Aroclor 1221	1	mg/kg	ND(0.082)	ND(0.082)
Aroclor 1232	1	mg/kg	ND(0.082)	ND(0.082)
Aroclor 1242	1	mg/kg	ND(0.082)	ND(0.082)
Aroclor 1248	1	mg/kg	ND(0.082)	ND(0.082)
Aroclor 1254	1	mg/kg	ND(0.082)	ND(0.082)
Aroclor 1260	1	mg/kg	ND(0.082)	ND(0.082)
Aroclor 1262	1	mg/kg	ND(0.082)	ND(0.082)
Aroclor 1268	1	mg/kg	ND(0.082)	ND(0.082)
General Chemistry				
Ignitability	NSE	present/ absent	absent	absent
pH	NSE	S.U.	6.8	2.2
Reactivity Cyanide	NSE	mg/kg	ND(3.9)	ND(3.9)
Reactivity Sulfide	NSE	mg/kg	ND(20)	ND(20)
Solids, Total	NSE	percent	95.3	94.5
Specific Conductance	NSE	µmhos/cm	7.0	220

Notes:
- mg/kg=milligram per kilogram; mg/L=milligrams per Liter; µmhos/cm=microohms per centimeter
- Reportable Concentrations (RCS-1) taken from the Massachusetts Contingency Plan (MCP) 310 CMR 401600 dated April 2014
- ND = Not Detected above laboratory reporting limits shown in parenthesis
- -- = Not Analyzed
- NSE = No Standard Exists
- Highlighted values exceeds the applicable MCP RCS-1 Reportable Concentration
- Full analytical results, including QA/QC information and data flags, are detailed in the laboratory analytical report

Table 5 - Summary of Groundwater Analytical Data
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Location ID		MCP	MCP	MCP		MW-3	MW-03	V-101	V-102	V-102	V-103	V-103	V-104	V-104	V-105	V-105	V-106	V-106	V-106	V-106	V-201	V-201	V-201	V-201
Sample Date	RCGW-1	METHOD 1 GW-1	METHOD 1 GW-2	METHOD 1 GW-3	Units	4/2/2019	12/22/2020	4/1/2019	4/1/2019	12/22/2020	4/2/2019	12/22/2020	4/2/2019	12/22/2020	4/1/2019	12/22/2020	4/2/2019	12/22/2020	3/29/2021	4/16/2021	3/29/2021	4/16/2021	10/11/2021	11/22/2021
Lab ID						19D0106-04	20L1187-04	19D0030-02	19D0030-03	20L1187-01	19D0106-01	20L1187-02	19D0106-03	20L1187-03	19D0030-04	20L1187-05	19D0106-02	20L1187-06	21C1453-01	21D0885-01	21C1453-03	21D0885-03	21J0574-01, 21J0579-01	21K1461-01RE1
PFAS																								
Perfluorodecanoic Acid (PFDA)	NSE	NSE	NSE	40000	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.00096	ND(0.0019)
Perfluoroheptanoic Acid (PFHpA)	NSE	NSE	NSE	40000	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.021	0.018
Perfluorohexanesulfonic Acid (PFHxS)	NSE	NSE	NSE	500	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.12	0.065
Perfluorononanoic Acid (PFNA)	NSE	NSE	NSE	40000	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0031	0.0022
Perfluorooctanesulfonic Acid (PFOS)	NSE	NSE	NSE	500	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.026	0.018
Perfluorooctanoic Acid (PFOA)	NSE	NSE	NSE	40000	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.047	0.046
Total MADEP Reg PFAS	0.02	0.02	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.22	0.1492
PFAS																								
2-(N-Ethylperfluorooctanesulfonamido) acetic acid (N-EtFOSAA)	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.00071	ND(0.0019)
2-(NMethylperfluorooctanesulfonamido) acetic acid (N-MeFOSSA)	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND(0.0019)	ND(0.0019)
Perfluorobutanesulfonic Acid (PFBS)	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.013	0.01
Perfluorododecanoic Acid (PFDoA)	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND(0.0019)	ND(0.0019)
Perfluorohexanoic Acid (PFHxA)	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.034	0.028
Perfluorotetradecanoic Acid (PFTeA)	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND(0.0019)	ND(0.0019)
Perfluorotridecanoic Acid (PFTriA)	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND(0.0019)	ND(0.0019)
Perfluoroundecanoic Acid (PFUnA)	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND(0.0019)	ND(0.0019)
Volatile Organic Compounds (VOCs)																								
Methyl Tert-Butyl Ether	70	70	50000	50000	µg/L	ND(1.0)	--	8.2	1.1	--	ND(1.0)	--	ND(1.0)	--	1.6	--	14	--	--	--	--	--	--	--
Tertiary-Amyl Methyl Ether (TAME)	NSE	NSE	NSE	NSE	µg/L	ND(2.0)	--	4.5	ND(2.0)	--	ND(2.0)	--	ND(2.0)	--	ND(2.0)	--	6.4	--	--	--	--	--	--	--
Total VOCs	NSE	NSE	NSE	NSE	µg/L	ND	--	12.70	1.1	--	ND	--	ND	--	1.6	--	20.40	--	--	--	--	--	--	--
Semivolatile Organic Compounds (SVOCs)																								
n-Nitrosodimethylamine	500	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND(9.9)	--
Total SVOCs	NSE	NSE	NSE	NSE	µg/L	ND	--	ND	ND	--	ND	--	ND	--	ND	--	ND	--	--	--	--	--	ND	--
Metals, Dissolved																								
Antimony	6	6	NSE	8000	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	--	--
Arsenic	10	10	NSE	900	µg/L	0.74	ND(0.80)	0.98	26	30	0.74	ND(0.80)	0.79	ND(0.80)	1.1	ND(0.80)	1.0	ND(0.80)	--	--	--	--	9.1	--
Copper	10000	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	5.3	3.6	7.4	4.6	--	--
Lead	10	15	NSE	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	--	--
Nickel	100	100	NSE	200	µg/L	--	74	--	--	13	--	ND(5.0)	--	5.1	--	29	110	160	--	--	--	--	9.7	--
Metals, Total																								
Antimony	NSE	NSE	NSE	NSE	µg/L	ND(1.0)	--	ND(1.0)	ND(1.0)	--	ND(1.0)	--	ND(1.0)	--	ND(1.0)	--	ND(1.0)	--	--	--	--	--	--	--
Arsenic	NSE	NSE	NSE	NSE	µg/L	ND(0.40)	--	ND(0.40)	22	--	ND(0.40)	--	0.50	--	ND(0.40)	--	1.6	--	--	--	--	--	--	--
Barium	NSE	NSE	NSE	NSE	µg/L	13	--	93	210	--	14	--	14	--	150	--	190	--	--	--	--	--	--	--
Beryllium	NSE	NSE	NSE	NSE	µg/L	ND(0.40)	--	ND(0.40)	ND(0.40)	--	ND(0.40)	--	ND(0.40)	--	ND(0.40)	--	ND(0.40)	--	--	--	--	--	--	--
Cadmium	NSE	NSE	NSE	NSE	µg/L	ND(0.50)	--	0.52	ND(0.50)	--	ND(0.50)	--	ND(0.50)	--	ND(0.50)	--	3.0	--	--	--	--	--	--	--
Chromium	NSE	NSE	NSE	NSE	µg/L	ND(1.0)	--	ND(1.0)	ND(1.0)	--	ND(1.0)	--	ND(1.0)	--	ND(1.0)	--	2.8	--	--	--	--	--	--	--
Copper	NSE	NSE	NSE	NSE	µg/L	ND(5.0)	--	5.1	ND(5.0)	--	ND(5.0)	--	ND(5.0)	--	ND(5.0)	--	6.9	--	--	--	--	--	--	--
Lead	NSE	NSE	NSE	NSE	µg/L	ND(1.0)	--	ND(1.0)	ND(1.0)	--	ND(1.0)	--	ND(1.0)	--	ND(1.0)	--	1.6	--	--	--	--	--	--	--
Manganese	NSE	NSE	NSE	NSE	µg/L	73	--	4400	7000	--	91	--	95	--	870	--	5400	--	--	--	--	--	--	--
Mercury	NSE	NSE	NSE	NSE	µg/L	ND(0.10)	--	ND(0.10)	ND(0.10)	--	ND(0.10)	--	ND(0.10)	--	ND(0.10)	--	ND(0.10)	--	--	--	--	--	--	--
Nickel	NSE	NSE	NSE	NSE	µg/L	ND(5.0)	--	17	9.0	--	ND(5.0)	--	ND(5.0)	--	44	--	110	--	--	--	--	--	--	--
Selenium	NSE	NSE	NSE	NSE	µg/L	ND(5.0)	--	ND(5.0)	ND(5.0)	--	ND(5.0)	--	ND(5.0)	--	ND(5.0)	--	ND(5.0)	--	--	--	--	--	--	--
Silver	NSE	NSE	NSE	NSE	µg/L	ND(0.50)	--	ND(0.50)	ND(0.50)	--	ND(0.50)	--	ND(0.50)	--	ND(0.50)	--	ND(0.50)	--	--	--	--	--	--	--
Thallium	NSE	NSE	NSE	NSE	µg/L	ND(0.20)	--	ND(0.20)	ND(0.20)	--	ND(0.20)	--	ND(0.20)	--	ND(0.20)	--	ND(0.20)	--	--	--	--	--	--	--
Vanadium	NSE	NSE	NSE	NSE	µg/L	ND(5.0)	--	ND(5.0)	ND(5.0)	--	ND(5.0)	--	ND(5.0)	--	ND(5.0)	--	ND(5.0)	--	--	--	--	--	--	--
Zinc	NSE	NSE	NSE	NSE	µg/L	ND(10)	--	ND(10)	ND(10)	--	ND(10)	--	ND(10)	--	ND(10)	--	33	--	--	--	--	--	--	--
Polychlorinated Biphenyls (PCBs)																								
Total PCBs	0.5	0.5	5	10	µg/L	ND(0.093)	--	ND(0.15)	ND(0.17)	--	ND(0.17)	--	ND(0.11)	--	ND(0.17)	--	ND(0.12)	--	--	--	--	--	--	--
General Chemistry																								
Ammonia	NSE	NSE	NSE	NSE	µg/L	ND(300)	--	1500	1500	--	ND(300)	--	ND(300)	--	1100	--	2000	--	--	--	--	--	--	--
Ammonia as Nitrogen	NSE	NSE	NSE	NSE	µg/L	--	4800	--	--	2200	--	ND(300)	--	ND(300)	--	8500	--	1000	--	--	--	--	2000	--
Chloride	NSE	NSE	NSE	NSE	µg/L	120000	--	260000	95000	--	230000	--	26000	--	140000	--	210000	--	--	--	--	--	--	--
Nitrogen	NSE	NSE	NSE	NSE	µg/L	3500	--	5100	7000	--	1700	--	4100	--	11000	--	39000	--	--	--	--	--	--	--
Nitrogen, Nitrate	NSE	NSE	NSE	NSE	µg/L	1500	--	2700	4700	--	1700	--	2100	--	7800	--	35000	--	--	--	--	--	--	--
Nitrogen, Nitrate/Nitrite	NSE	NSE	NSE	NSE	µg/L	ND(100)	--	400	254	--	ND(100)	--	ND(100)	--	810	--	302	--	--	--	--	--	--	--
Nitrogen, Total Kjeldahl	NSE	NSE	NSE	NSE	µg/L	2000	--	2000	2000	--	ND(1000)	--	2000	--	2000	--	4000	--	--	--	--	--	--	--
Ortho-phosphate	NSE	NSE	NSE	NSE	µg/L	ND(50)	--	ND(50)	ND(50)	--	ND(50)	--	ND(50)	--	ND(50)	--	ND(50)	--	--	--	--	--	--	--
pH	NSE	NSE	NSE	NSE	S.U.	--	--	--	--	--	--	--	--	--	--	--	--	--	5.8	6.0	6.4	6.5	--	--
Phosphorus	NSE	NSE	NSE	NSE	µg/L	ND(62)	--	ND(62)	ND(62)	--	140	--	ND(62)	--	ND(62)	--	93	--	ND(50)	150	ND(50)	ND(50)	--	--

Notes:
- mg/kg=milligram per kilogram; mg/L=milligrams per Liter; µmhos/cm=microohms per centimeter
- Reportable Concentrations (RCGW-1) taken from the Massachusetts Contingency Plan (MCP) 310 CMR 40.0974(2) dated April 2014
- Method 1 Groundwater Standards taken from the MCP 310 CMR 40.0974(2) dated April 2015
- ND = Not Detected above laboratory reporting limits shown in parenthesis
- -- = Not Analyzed
- NSE = No Standard Exists
- SNC = Standard Not Calculated
- Highlighted values exceeds the applicable Cleanup Criteria
- Full analytical results, including QA/QC information and data flags, are detailed in the laboratory analytical report

Table 5 - Summary of Groundwater Analytical Data
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
Release Tracking Number (RTN) 3-36013

Location ID Sample Date Lab ID	RCGW-1	MCP METHOD 1 GW-1	MCP METHOD 1 GW-2	MCP METHOD 1 GW-3	Units	V-201 11/22/2021 21K1461-02RE1	V-202 3/29/2021 21C1453-02	V-202 4/16/2021 21D0885-02	V-202 5/24/2021 21E1391-01	V-202 10/11/2021 21J0574-04, 21J0579-04	V-301 10/12/2021 21J0748-03, 21J0750-03	V-301 10/12/2021 21J0748-04, 21J0750-04	V-302 10/11/2021 21J0574-05, 21J0579-05	V-303 10/12/2021 21J0748-01, 21J0750-01	V-304 10/11/2021 21J0574-02, 21J0579-02	V-305 10/11/2021 21J0574-03, 21J0750-03	V-306 10/12/2021 21J0748-02, 21J0579-02
PFAS																	
Perfluorodecanoic Acid (PFDA)	NSE	NSE	NSE	40000	µg/L	ND(0.0019)	--	--	--	0.00085	0.00089	0.00073	0.0012	0.0013	ND(0.0018)	0.00046	0.0021
Perfluoroheptanoic Acid (PFHpA)	NSE	NSE	NSE	40000	µg/L	0.018	--	--	--	0.011	0.0073	0.0078	0.011	0.0086	0.0019	0.0055	0.0013
Perfluorohexanesulfonic Acid (PFHxS)	NSE	NSE	NSE	500	µg/L	0.067	--	--	--	0.033	0.0075	0.0069	0.016	0.0082	0.0047	0.0086	0.0012
Perfluorononanoic Acid (PFNA)	NSE	NSE	NSE	40000	µg/L	0.0022	--	--	--	0.0024	0.0031	0.0029	0.0034	0.0043	ND(0.0018)	0.0012	0.0010
Perfluorooctanesulfonic Acid (PFOS)	NSE	NSE	NSE	500	µg/L	0.017	--	--	--	0.022	0.018	0.02	0.024	0.02	0.0010	0.0089	0.026
Perfluorooctanoic Acid (PFOA)	NSE	NSE	NSE	40000	µg/L	0.049	--	--	--	0.07	0.023	0.024	0.073	0.028	0.0034	0.023	0.0068
Total MADEP Reg PFAS	0.02	0.02	NSE	NSE	µg/L	0.1532	--	--	--	0.14	0.06	0.062	0.13	0.07	0.011	0.048	0.038
PFAS																	
2-(N-Ethylperfluorooctanesulfonamido) acetic acid (N-EtFOSAA)	NSE	NSE	NSE	NSE	µg/L	ND(0.0019)	--	--	--	0.00099	0.0022	0.0031	0.0042	0.0036	ND(0.0019)	ND(0.0019)	0.00078
2-(NMethylperfluorooctanesulfonamido) acetic acid (N-MeFOSSA)	NSE	NSE	NSE	NSE	µg/L	ND(0.0019)	--	--	--	ND(0.0019)	ND(0.0019)	ND(0.0020)	ND(0.0019)	ND(0.0020)	ND(0.0018)	ND(0.0019)	ND(0.0018)
Perfluorobutanesulfonic Acid (PFBS)	NSE	NSE	NSE	NSE	µg/L	0.0096	--	--	--	0.0071	0.0040	0.0038	0.0048	0.0030	0.0017	0.0028	0.00055
Perfluorododecanoic Acid (PFDoA)	NSE	NSE	NSE	NSE	µg/L	ND(0.0019)	--	--	--	ND(0.0018)	ND(0.0019)	ND(0.0020)	ND(0.0019)	ND(0.0019)	ND(0.0018)	ND(0.0019)	ND(0.0018)
Perfluorohexanoic Acid (PFHxA)	NSE	NSE	NSE	NSE	µg/L	0.03	--	--	--	0.022	0.013	0.013	0.024	0.016	0.0059	0.0052	0.0019
Perfluorotetradecanoic Acid (PFTeA)	NSE	NSE	NSE	NSE	µg/L	ND(0.0019)	--	--	--	ND(0.0018)	ND(0.0019)	ND(0.0020)	ND(0.0019)	ND(0.0020)	ND(0.0018)	ND(0.0019)	ND(0.0018)
Perfluorotridecanoic Acid (PFTriA)	NSE	NSE	NSE	NSE	µg/L	ND(0.0019)	--	--	--	ND(0.0018)	ND(0.0019)	ND(0.0020)	ND(0.0019)	ND(0.0020)	ND(0.0018)	ND(0.0019)	ND(0.0018)
Perfluoroundecanoic Acid (PFUnA)	NSE	NSE	NSE	NSE	µg/L	ND(0.0019)	--	--	--	ND(0.0018)	ND(0.0019)	ND(0.0020)	ND(0.0019)	ND(0.0020)	ND(0.0018)	ND(0.0019)	ND(0.0018)
Volatile Organic Compounds (VOCs)																	
Methyl Tert-Butyl Ether	70	70	50000	50000	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Tertiary-Amyl Methyl Ether (TAME)	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Total VOCs	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Semivolatile Organic Compounds (SVOCs)																	
n-Nitrosodimethylamine	500	NSE	NSE	NSE	µg/L	--	--	--	--	ND(9.8)	ND(9.7)	ND(9.9)	ND(9.8)	ND(10)	ND(10)	ND(10)	ND(10)
Total SVOCs	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	ND	ND	ND	ND	ND	ND	ND	ND
Metals, Dissolved																	
Antimony	6	6	NSE	8000	µg/L	--	ND(1.0)	ND(1.0)	ND(1.0)	--	--	--	--	--	--	--	--
Arsenic	10	10	NSE	900	µg/L	--	--	--	--	120	1.2	1.2	98	160	4.7	ND(0.80)	ND(0.80)
Copper	10000	NSE	NSE	NSE	µg/L	--	2.8	1.1	3.5	--	--	--	--	--	--	--	--
Lead	10	15	NSE	10	µg/L	--	ND(0.50)	ND(0.50)	ND(0.50)	--	--	--	--	--	--	--	--
Nickel	100	100	NSE	200	µg/L	--	--	--	12	15	29	30	14	22	ND(5.0)	11	44
Metals, Total																	
Antimony	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Barium	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Copper	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Lead	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Silver	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Polychlorinated Biphenyls (PCBs)																	
Total PCBs	0.5	0.5	5	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
General Chemistry																	
Ammonia	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia as Nitrogen	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	4800	5700	5900	8700	12000	ND(300)	ND(300)	3900
Chloride	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Nitrogen	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Nitrogen, Nitrate	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Nitrogen, Nitrate/Nitrite	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Nitrogen, Total Kjeldahl	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Ortho-phosphate	NSE	NSE	NSE	NSE	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
pH	NSE	NSE	NSE	NSE	S.U.	--	6.4	6.6	6.7	--	--	--	--	--	--	--	--
Phosphorus	NSE	NSE	NSE	NSE	µg/L	--	67	ND(50)	87	--	--	--	--	--	--	--	--

Notes:
- mg/kg=milligram per kilogram; mg/L=milligrams per Liter; µmhos/cm=microohms per centimeter
- Reportable Concentrations (RCGW-1) taken from the Massachusetts Contingency Plan (MCP) 310 CMR 40.0974(2) dated April 2014
- Method 1 Groundwater Standards taken from the MCP 310 CMR 40.0974(2) dated April 2015
- ND = Not Detected above laboratory reporting limits shown in parenthesis
- -- = Not Analyzed
- NSE = No Standard Exists
- SNC = Standard Not Calculated
- Highlighted values exceeds the applicable Cleanup Criteria
- Full analytical results, including QA/QC information and data flags, are detailed in the laboratory analytical report

Table 6 - Summary of Soil Analytical Results Used in the Risk Characterization
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
RTN 3-36013

Sample ID	Chemical Abstract Service (CAS) Number	MCP Method 1/ Method 2 S-1/GW-1 Standard	MCP Method 1/ Method 2 S-1/GW-2 Standard	MCP Method 1/ Method 2 S-1/GW-3 Standard	Units	V-301 (2-4)	V-302 (2-4)	V-303 (2-4)	V-304 (2-4)	V-305 (2-4)	V-306 (2-4)	V-307 (2-4)	V-308 (2-4)	V-309 (0-2)	V-313 (2-4)	V-314 (2-4)	V-402 (2-4)	V-402-FR-CONF-W
Sample Date						5/8/2019	5/8/2019	5/8/2019	5/8/2019	5/8/2019	5/8/2019	5/8/2019	5/8/2019	5/8/2019	5/8/2019	5/8/2019	4/12/2021	5/4/2021
Sample Depth Interval (ft)						2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	0-2	2-4	2-4	2-4	0-2
Sample Depth Elevation (ft)						123-121	123-121	123-121	123-121	123-121	123-121	123-121	123-121	125-123	130-128	130-128	123-121	130-128
Current Depth (ft bgs)						12-14	12-14	12-14	12-14	12-14	12-14	12-14	12-14	10-12	5-7	5-7	12-14	16-18
Current Surface Cover						Building	Building	Building	Building	Building	Building	Building	Building	Building	Building	Building	Building	Pavement
Lab ID						19E0566-01	19E0566-02	19E0566-03	19E0566-04	19E0566-05	19E0566-06	19E0566-07	19E0566-08	19E0566-09	19E0566-13	19E0566-14	21D0643-01	21E0205-02
Metals																		
Antimony	7440-36-0	20	20	20	mg/kg	ND(1.7)	ND(1.8)	ND(1.8)	ND(1.7)	ND(1.7)	ND(1.8)	ND(1.8)	ND(1.7)	ND(1.7)	ND(1.8)	ND(1.8)	--	5.7
Copper	7440-50-8	*342*	*342*	*342*	mg/kg	13	22	45	13	37	31	28	43	4.2	24	32	--	90
Lead	7439-92-1	200	200	200	mg/kg	5	31	28	12	22	25	57	22	5.9	86	55	23	310

Notes:
- mg/kg=milligram per kilogram
- Method 1 S-1 Standards taken from the Massachusetts Contingency Plan (MCP) 310 CMR 40.0974(2) dated April 2014
- Method 2 Standards (italicized) were developed for copper because no Method 1 Standards exist
- ND = Not Detected above laboratory reporting limits shown in parenthesis
- -- = Not Analyzed
- Highlighted values exceed applicable MCP Method 1 Standard
- Full analytical results are detailed in the laboratory analytical report

Table 6 - Summary of Soil Analytical Results Used in the Risk Characterization
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
RTN 3-36013

Sample ID	Chemical Abstract Service (CAS) Number	MCP Method 1/ Method 2 S-1/GW-1 Standard	MCP Method 1/ Method 2 S-1/GW-2 Standard	MCP Method 1/ Method 2 S-1/GW-3 Standard	Units	V-403-FR-CONF-W	V-404-FR-CONF-N	V-405-FR-CONF-N	V-406-FR-CONF-N	V-407-FR-CONF-E	V-408-FR-CONF-S	V-409-FR-CONF-S	V-410-FR-CONF-S	V501-FR-CONF-N	V502-FR-CONF-S	V-505-FR-W
Sample Date						5/4/2021	5/4/2021	5/4/2021	5/4/2021	5/4/2021	5/4/2021	5/4/2021	5/4/2021	5/14/2021	5/14/2021	5/10/2021
Sample Depth Interval (ft)						0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2
Sample Depth Elevation (ft)						130-128	130-128	125-123	125-123	125-123	125-123	125-123	130-128	135-133	135-133	135-133
Current Depth (ft bgs)						16-18	16-18	10-12	10-12	10-12	10-12	10-12	5-7	0-2	0-2	0-2
Current Surface Cover						Pavement	Pavement	Building	Building	Building	Building	Building	Building	Unpaved	Unpaved	Unpaved
Lab ID						21E0205-03	21E0205-04	21E0205-05	21E0205-06	21E0205-07	21E0205-08	21E0205-09	21E0205-10	21E0829-01	21E0829-02	21E0503-02
Metals																
Antimony	7440-36-0	20	20	20	mg/kg	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	--	--	ND(1.8)
Copper	7440-50-8	*342*	*342*	*342*	mg/kg	19	14	78	180	27	13	13	47	--	--	23
Lead	7439-92-1	200	200	200	mg/kg	70	110	21	90	28	17	63	33	71	27	56

Notes:
- mg/kg=milligram per kilogram
- Method 1 S-1 Standards taken from the Massachusetts Contingency Plan (MCP) 310 CMR 40.0974(2) dated April 2014
- Method 2 Standards (italicized) were developed for copper because no Method 1 Standards exist
- ND = Not Detected above laboratory reporting limits shown in parenthesis
- -- = Not Analyzed
- Highlighted values exceed applicable MCP Method 1 Standard
- Full analytical results are detailed in the laboratory analytical report

Table 7 - Summary Statistics for Soil Analytical Results Used in the Risk Characterization
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
RTN 3-36013

Oil and/or Hazardous Material (OHM)	CAS Number	MassDEP Method 1/ Method 2 S-1/GW-1 Standard (mg/kg)	MassDEP Method 1/ Method 2 S-1/GW-3 Standard (mg/kg)	Number of Samples Detected	Number of Samples Analyzed	Frequency of Detection	Arithmetic Mean Concentration (mg/kg)	Minimum Detected Concentration (mg/kg)	Maximum Detected Concentration (mg/kg)	Sample with Maximum Detected Concentration	MassDEP Background Concentration in Natural Soil (mg/kg)	Maximum Detected Concentration > Background?	Included on CoPC List?	Basis for Inclusion or Exclusion
Metals														
Antimony	7440-36-0	20	20	1	21	5%	1.9	5.7	5.7	V-402-FR-CONF-W	1	Yes	Yes	Exceeds Background
Copper	7440-50-8	*342*	*342*	21	21	100%	38	4.2	180	V-406-FR-CONF-N	40	Yes	Yes	Exceeds Background
Lead	7439-92-1	200	200	24	24	100%	53	5.0	310	V-402-FR-CONF-W	100	Yes	Yes	Exceeds Background

Notes

- This table lists oil or hazardous material that were detected at least once within the exposure point.
- CAS = Chemical Abstract Service number or assigned equivalent
- mg/kg = milligrams per kilogram
- NA = Not available/Not applicable
- Method 2 Standards (italicized) were developed for copper because no Method 1 Standards exist.
- The arithmetic mean was calculated using USEPA ProUCL Software, Version 5.1.002 (5.1). Both detected concentrations and results below detection limits were used to calculate arithmetic mean concentrations.
- Background concentrations obtained from Massachusetts Department of Environmental Protection (MassDEP) Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in Soil (May 2002). A constituent was selected as a compound of potential concern (CoPC) if its maximum concentration exceeds its background concentration, or if no background concentration is available.

Table 8 - Exposure Point Concentrations for Post-Excavation Firing Range Soil
River's Edge
484 - 490 Boston Post Road, Wayland, Massachusetts
VERTEX Project No. 67404
RTN 3-36013

Contaminant of Potential Concern (CoPC)	CAS Number	MassDEP Method 1/ Method 2 S-1/GW-1 Standard (mg/kg)	MassDEP Method 1/ Method 2 S-1/GW-2 Standard (mg/kg)	MassDEP Method 1/ Method 2 S-1/GW-3 Standard (mg/kg)	Arithmetic Mean Concentration (mg/kg)	Percentage of Data Points Equal to or Less Than the Lowest Standard	Minimum Detected Concentration (mg/kg)	Maximum Detected Concentration (mg/kg)	Sample with Maximum Detected Concentration	Average ≤ Lowest Standard?	Percentage of Data Points Less Than Lowest Standard > 75%?	Concentration < 10 times the Lowest Standard?	Exposure Point Concentration (EPC) (mg/kg)	Basis for EPC	EPC < Lowest Standard?
Metals															
Antimony	7440-36-0	20	20	20	1.9	100%	5.7	5.7	V-402-FR-CONF-W	Yes	Yes	Yes	1.9	Arithmetic Mean	Yes
Copper	7440-50-8	*342*	*342*	*342*	38	100%	4.2	180	V-406-FR-CONF-N	Yes	Yes	Yes	38	Arithmetic Mean	Yes
Lead	7439-92-1	200	200	200	53	96%	5.0	310	V-402-FR-CONF-W	Yes	Yes	Yes	53	Arithmetic Mean	Yes

Notes

- This table lists oil or hazardous material that were detected at least once within the exposure point.
- CAS = Chemical Abstract Service number or assigned equivalent
- mg/kg = milligrams per kilogram
- NA = Not available/Not applicable
- EPC = Exposure Point Concentration in accordance with the criteria specified at 310 CMR 40.0926(3)(b)1.
- Method 2 Standards (italicized) were developed for copper because no Method 1 Standards exist.
- The arithmetic mean was calculated using USEPA ProUCL Software, Version 5.1.002 (5.1). Both detected concentrations and results below detection limits were used to calculate arithmetic mean concentrations.

APPENDIX A:
MASSDEP PRIORITY RESOURCE MAP

MassDEP - Bureau of Waste Site Cleanup

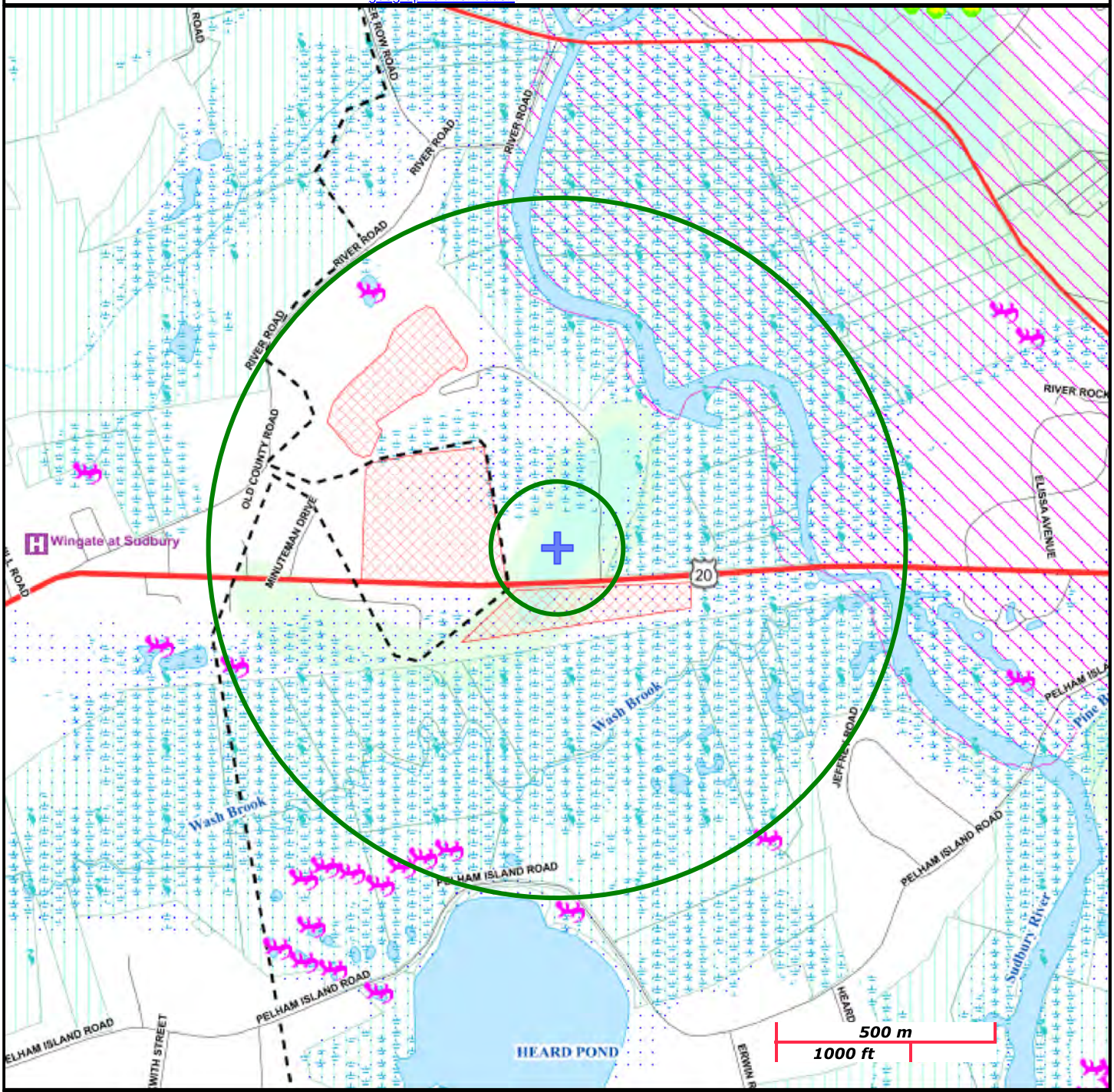
Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

Site Information:
RIVER'S EDGE
484 BOSTON POST ROAD WAYLAND, MA
3-000036013

NAD83 UTM Meters:
4692904mN , 303848mE (Zone: 19)
February 1, 2022

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

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



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

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

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

Aquifers: Medium Yield, High Yield, EPA Sole Source

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

PWS Protection Areas: Zone II, IWPA, Zone A

Hydrography: Open Water, PWS Reservoir, Tidal Flat

Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

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

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

APPENDIX B:
RELEVANT DOCUMENTS

Rivers Edge

484 Boston Post Road

Wayland, MA 01778

Inquiry Number: 5006034.9

July 28, 2017

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

07/28/17

Site Name:

Rivers Edge
484 Boston Post Road
Wayland, MA 01778
EDR Inquiry # 5006034.9

Client Name:

Vertex Engineering Services
400 Libbey Parkway
Weymouth, MA 02189-0000
Contact: Kristen Sarson

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2010	1"=500'	Flight Year: 2010	USDA/NAIP
2008	1"=500'	Flight Year: 2008	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
1995	1"=500'	Acquisition Date: March 29, 1995	USGS/DOQQ
1985	1"=500'	Flight Date: April 17, 1985	USGS
1980	1"=500'	Flight Date: October 10, 1980	USDA
1978	1"=500'	Flight Date: May 12, 1978	USGS
1970	1"=500'	Flight Date: October 06, 1970	USDA
1969	1"=500'	Flight Date: April 09, 1969	USGS
1963	1"=500'	Flight Date: April 27, 1963	USGS
1957	1"=500'	Flight Date: April 22, 1957	USGS
1952	1"=500'	Flight Date: June 16, 1952	USDA

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INQUIRY #: 5006034.9
YEAR: 2012
= 500'
N
EDR

INQUIRY #: 5006034.9
YEAR: 2010
= 500'
N
EDR

INQUIRY #: 5006034.9
YEAR: 2008
= 500'
N
EDR

INQUIRY #: 5006034.9
YEAR: 2006
= 500'
N
EDR

INQUIRY #: 5006034.9
YEAR: 1995
= 500'
N
EDR

INQUIRY #: 5006034.9
YEAR: 1985
= 500'
N
EDR

INQUIRY #: 5006034.9
YEAR: 1980
= 500'
N
EDR

INQUIRY #: 5006034.9

YEAR: 1978

= 500'

N

EDR

INQUIRY #: 5006034.9

YEAR: 1970

= 500'

N

EDR

INQUIRY #: 5006034.9
YEAR: 1969
= 500'
N
EDR

INQUIRY #: 5006034.9
YEAR: 1963
= 500'
N
EDR

INQUIRY #: 5006034.9

YEAR: 1957

= 500'

N

EDR

INQUIRY #: 5006034.9
YEAR: 1952
= 500'
N
EDR

APPENDIX C:
SOIL BORING, TEST PIT, & MONITORING WELL CONSTRUCTION LOGS

TEST PIT LOG

VERTEX®	Project: Wayland Location: Wayland, MA	**DESIGNATION:** **PROJECT NO.:** **EXCAVATOR:** **INSPECTOR:** **DATE:**	**TP-F8** 46047 The Greener Group, LLC Kristen Sarson 3/1/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown fine to coarse SAND, some fine to coarse gravel, trace cobbles and debris (wood, metal, brick, asphalt, concrete).	<1.0
1			
2			
3			
4			
5		5-10' Dark brown fine to coarse SAND and fine to coarse GRAVEL, some cobbles, trace debris (wood, metal, brick, asphalt, concrete).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project: Wayland Location: Wayland, MA	**DESIGNATION:** **PROJECT NO.:** **EXCAVATOR:** **INSPECTOR:** **DATE:**	**TP-E8** 46047 The Greener Group, LLC Kristen Sarson 3/1/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown fine to coarse SAND and fine to coarse GRAVEL, trace silt and debris (ceramic, asphalt, concrete, fabric, brick).	<1.0
1			
2			
3			
4			
5		5-10' Dark brown fine to coarse SAND and fine to coarse GRAVEL, trace silty clay and debris (ceramic, asphalt, large concrete blocks, fabric, brick).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project: Wayland Location: Wayland, MA	**DESIGNATION:** **PROJECT NO.:** **EXCAVATOR:** **INSPECTOR:** **DATE:**	**TP-F6** 46047 The Greener Group, LLC Kristen Sarson 3/1/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Brown fine to coarse SAND and fine to coarse GRAVEL, trace silt and debris (large concrete blocks, brick, asphalt, metal).	<1.0
1			
2			
3			
4			
5		5-10' Brown fine to coarse SAND and fine to coarse GRAVEL, some asphalt, trace silt and other debris (wood, paper, metal, plastic, brick).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	DESIGNATION: TP-G6
	Location:	Wayland, MA	PROJECT NO.: 46047
			EXCAVATOR: The Greener Group, LLC
			INSPECTOR: Kristen Sarson
			DATE: 3/1/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Brown fine to coarse SAND and SILT, some coarse gravel and cobbles, trace debris (asphalt, brick, plastic, concrete).	<1.0
1			
2			
3			
4			
5		5-10' Dark brown fine to medium SAND, some silt and coarse sand, little fine to coarse gravel, trace cobbles and debris (rubber, concerete, asphalt, glass, metal).	1.8
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	DESIGNATION: TP-G7
	Location:	Wayland, MA	PROJECT NO.: 46047
			EXCAVATOR: The Greener Group, LLC
			INSPECTOR: Kristen Sarson
			DATE: 3/1/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Brown fine to coarse SAND and fine to coarse GRAVEL, some cobbles, trace debris (asphalt, wood, plastic, brick, concrete).	<1.0
1			
2			
3			
4			
5		5-10' Brown fine to coarse SAND and fine to coarse GRAVEL, some cobbles, trace silt and debris (concrete, wood, plastic, asphalt).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project: Wayland Location: Wayland, MA	**DESIGNATION:** **PROJECT NO.:** **EXCAVATOR:** **INSPECTOR:** **DATE:**	**TP-F7** 46047 The Greener Group, LLC Kristen Sarson 3/1/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Brown fine to coarse SAND, some fine to coarse gravel, trace debris (asphalt, metal). Pockets to grey silty clay.	<1.0
1			
2			
3			
4		4' Suspect transite pipe.	
5		5-10' Dark brown silty SAND, trace debris (asphalt, concrete, wood, plastic).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	DESIGNATION: TP-E7
	Location:	Wayland, MA	PROJECT NO.: 46047
			EXCAVATOR: The Greener Group, LLC
			INSPECTOR: Kristen Sarson
			DATE: 3/1/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Tan fine to coarse SAND, trace fine to coarse gravel and debris (asphalt, metal, plastic).	<1.0
1			
2			
3			
4			
5		5-10' Tan fine to coarse SAND and fine to coarse GRAVEL, some cobbles, trace debris (asphalt, plastic, metal, fabric).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	**DESIGNATION:** **TP-E6**
	Location:	Wayland, MA	**PROJECT NO.:** 46047
			EXCAVATOR: The Greener Group, LLC
			INSPECTOR: Kristen Sarson
			DATE: 3/1/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Brown fine to coarse SAND and fine to coarse GRAVEL, some asphalt and cobbles, trace debris (concrete, wood, metal).	<1.0
1			
2			
3			
4			
5		5-10' Dark brown fine to coarse SAND, some fine to coarse gravel and cobbles, trace wood and debris (plastic, asphalt, concrete).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	
	Location:	Wayland, MA	
	DESIGNATION:	**TP-F5**	
	PROJECT NO.:	46047	
	EXCAVATOR:	The Greener Group, LLC	
	INSPECTOR:	Kristen Sarson	
	DATE:	3/1/2019	

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown fine to coarse SAND, trace cobbles and debris (concrete, plastic, wood, metal).	<1.0
1			
2			
3			
4			
5		5-10' Dark brown fine to coarse SAND, trace cobbles and debris (concrete, plastic, wood, metal, asphalt).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	DESIGNATION: TP-E5
	Location:	Wayland, MA	PROJECT NO.: 46047
			EXCAVATOR: The Greener Group, LLC
			INSPECTOR: Kristen Sarson
			DATE: 3/1/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Brown and grey fine to coarse GRAVEL and fine to coarse SAND, trace cobbles and debris (asphalt, concrete, glass).	<1.0
1			
2			
3			
4			
5		5-11' Brown and grey fine to coarse GRAVEL and fine to coarse SAND, trace cobbles and debris (asphalt, concrete, glass). Pocket of wood and logs, accompanied by slight organic odor.	<1.0
6			
7			
8			
9			
10			
11		11-15' Dark brown fine to coarse SAND, some wood, roots, and silty clay, slight organic odor.	
12			
13			
14			
15		Test pit terminated at 15 feet bgs. Refusal not encountered.	

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	DESIGNATION: TP-F4
	Location:	Wayland, MA	PROJECT NO.: 46047
			EXCAVATOR: The Greener Group, LLC
			INSPECTOR: Kristen Sarson
			DATE: 3/1/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Light brown fine to coarse SAND, some fine to coarse gravel, trace debris (brick, wood, concrete, asphalt, plastic).	<1.0
1			
2			
3			
4			
5		5-10' Light brown fine to coarse SAND, some fine to coarse gravel, trace debris (brick, wood, concrete, asphalt, plastic).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	
	Location:	Wayland, MA	
	DESIGNATION:	**TP-E4**	
	PROJECT NO.:	46047	
	EXCAVATOR:	The Greener Group, LLC	
	INSPECTOR:	Kristen Sarson	
	DATE:	3/1/2019	

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Brown fine to coarse SAND and fine to coarse GRAVEL, trace silt, cobbles, and debris (metal, wood, concrete, asphalt).	<1.0
1			
2			
3			
4			
5		5-10' Brown fine to coarse SAND and fine to coarse GRAVEL, trace silt, cobbles, and debris (metal, wood, concrete, asphalt, brick, styrofoam).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	
	Location:	Wayland, MA	
	DESIGNATION:	**TP-D7**	
	PROJECT NO.:	46047	
	EXCAVATOR:	The Greener Group, LLC	
	INSPECTOR:	Kristen Sarson	
	DATE:	3/11/2019	

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Brown fine to coarse SAND and fine to coarse GRAVEL, trace boulders and debris (asphalt, wood, concrete).	<1.0
1			
2			
3			
4			
5		5-10' Brown fine to coarse SAND and fine to coarse GRAVEL, trace boulders and debris (asphalt, wood, concrete, metal, rubber).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	DESIGNATION: TP-D6
	Location:	Wayland, MA	PROJECT NO.: 46047
			EXCAVATOR: The Greener Group, LLC
			INSPECTOR: Kristen Sarson
			DATE: 3/11/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown fine to coarse SAND and fine to coarse GRAVEL, some cobbles, trace debris (concrete, asphalt, fabric, brick). Clumps of clay observed.	<1.0
1			
2			
3			
4			
5		5-10' Dark brown fine to coarse SAND and fine to coarse GRAVEL, some cobbles, trace clay trace clay and debris (asphalt, brick, concrete, ceramic, metal).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	DESIGNATION: TP-C6
	Location:	Wayland, MA	PROJECT NO.: 46047
			EXCAVATOR: The Greener Group, LLC
			INSPECTOR: Kristen Sarson
			DATE: 3/11/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown fine to coarse GRAVEL and fine to coarse SAND, trace clay and debris (asphalt, plastic, metal, wood, concrete).	<1.0
1			
2			
3			
4			
5		5-10' Dark brown fine to coarse GRAVEL and fine to coarse SAND, trace debris (asphalt, plastic, metal, wood, concrete).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	DESIGNATION: TP-B6
	Location:	Wayland, MA	PROJECT NO.: 46047
			EXCAVATOR: The Greener Group, LLC
			INSPECTOR: Kristen Sarson
			DATE: 3/11/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown fine to coarse SAND, some silt, trace debris (ceramic, asphalt, brick, metal, concrete).	<1.0
1			
2			
3			
4			
5		5-10' Dark brown fine to coarse SAND, some fine to coarse gravel, little debris (brick, asphalt, ceramic, concrete, metal, glass), trace silt.	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project: Wayland Location: Wayland, MA	**DESIGNATION:** **PROJECT NO.:** **EXCAVATOR:** **INSPECTOR:** **DATE:**	**TP-B5** 46047 The Greener Group, LLC Kristen Sarson 3/11/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown fine to coarse SAND, some fine to coarse gravel and cobbles, trace silt and debris (asphalt, concrete, glass).	<1.0
1			
2			
3			
4			
5		5-10' Dark brown fine to coarse SAND, some fine to coarse gravel and cobbles, trace silt and debris (asphalt, concrete, glass).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	
	Location:	Wayland, MA	
	DESIGNATION:	**TP-C5**	
	PROJECT NO.:	46047	
	EXCAVATOR:	The Greener Group, LLC	
	INSPECTOR:	Kristen Sarson	
	DATE:	3/11/2019	

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-6' Tan silty CLAY, some fine to coarse sand and fine to coarse gravel, trace cobbles and debris (brick, asphalt, concrete, glass).	<1.0
1			
2			
3			
4			
5			
6		6-10' Grey fine to coarse GRAVEL, some silty clay, saturated.	2.2
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	
	Location:	Wayland, MA	
	DESIGNATION:	**TP-D5**	
	PROJECT NO.:	46047	
	EXCAVATOR:	The Greener Group, LLC	
	INSPECTOR:	Kristen Sarson	
	DATE:	3/11/2019	

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown fine to coarse SAND, some fine to coarse gravel, trace silt, cobbles, and debris (asphalt, brick, fabric, concrete).	<1.0
1			
2			
3			
4			
5		5-10' Tan fine to coarse SAND, some coarse gravel, trace cobbles and debris (asphalt, brick, concrete).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	DESIGNATION: TP-D4
	Location:	Wayland, MA	PROJECT NO.: 46047
			EXCAVATOR: The Greener Group, LLC
			INSPECTOR: Kristen Sarson
			DATE: 3/11/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Brown fine to coarse GRAVEL, some fine to coarse sand, trace cobbles, clay, and debris (brick, asphalt, concrete, plastic).	<1.0
1			
2			
3			
4			
5		5-10' Brown fine to coarse GRAVEL grading to fine to coarse SAND, some asphalt/ coal patch, trace cobbles and debris (brick, concrete, plastic).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	**DESIGNATION:** **TP-C4**
	Location:	Wayland, MA	**PROJECT NO.:** 46047
			EXCAVATOR: The Greener Group, LLC
			INSPECTOR: Kristen Sarson
			DATE: 3/11/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Brown fine to coarse SAND, some fine to coarse gravel, trace silt, cobbles, and debris (plastic, metal, brick, asphalt).	<1.0
1			
2			
3			
4			
5		5-10' Dark brown fine to coarse GRAVEL, some fine to coarse sand, little wood, trace debris (aspahlt, metal, plastic, concrete).	1.3
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project: Wayland Location: Wayland, MA	**DESIGNATION:** **PROJECT NO.:** **EXCAVATOR:** **INSPECTOR:** **DATE:**	**TP-B4** 46047 The Greener Group, LLC Kristen Sarson 3/11/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Brown fine to coarse SAND, pockets of fine to coarse gravel, trace silt, clay, cobbles, and debris (brick, glass, asphalt, concrete).	<1.0
1			
2			
3			
4			
5		5-10' Brown fine to coarse SAND, pockets of fine to coarse gravel, trace silt, clay, cobbles, and debris (brick, glass, asphalt, concrete).	1.2
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	DESIGNATION: TP-A5
	Location:	Wayland, MA	PROJECT NO.: 46047
			EXCAVATOR: The Greener Group, LLC
			INSPECTOR: Kristen Sarson
			DATE: 3/11/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Brown fine to coarse SAND,little fine to coarse gravel, trace cobbles and debris (metal, asphalt, plastic, concrete, glass, wood).	<1.0
1			
2			
3			
4			
5		5-10' Brown fine to coarse SAND,little fine to coarse gravel, trace cobbles and debris (metal, asphalt, plastic, concrete, glass, wood).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	DESIGNATION: TP-A4
	Location:	Wayland, MA	PROJECT NO.: 46047
			EXCAVATOR: The Greener Group, LLC
			INSPECTOR: Kristen Sarson
			DATE: 3/11/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Brown fine to coarse SAND,little fine to coarse gravel, trace cobbles and debris (metal, asphalt, plastic, concrete, glass, wood).	<1.0
1			
2			
3			
4			
5		5-10' Brown fine to coarse SAND,little fine to coarse gravel, trace cobbles and debris (metal, asphalt, plastic, concrete, glass, wood).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project: Wayland Location: Wayland, MA	**DESIGNATION:** **PROJECT NO.:** **EXCAVATOR:** **INSPECTOR:** **DATE:**	**TP-A3** 46047 The Greener Group, LLC Kristen Sarson 3/11/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown fine to coarse SAND, little fine to coarse gravel, trace cobbles, clay, and debris (metal, glass, asphalt, concrete).	<1.0
1			
2			
3			
4			
5		5-10' Dark brown fine to coarse SAND, little fine to coarse gravel, trace cobbles and debris (metal, glass, asphalt, concrete).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	
	Location:	Wayland, MA	
	DESIGNATION:	**TP-B3**	
	PROJECT NO.:	46047	
	EXCAVATOR:	The Greener Group, LLC	
	INSPECTOR:	Kristen Sarson	
	DATE:	3/11/2019	

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Brown fine to coarse SAND,little fine to coarse gravel, trace cobbles and debris (metal, asphalt, plastic, concrete, glass, wood).	<1.0
1			
2			
3			
4			
5		5-7' Tan fine to coarse SAND and fine to coarse GRAVEL, trace cobbles and debris (asphalt, plastic, concrete).	9.2
6			
7		7-10' Grey and black mottled clayey PEAT, organic odor.	
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	DESIGNATION: TP-C3
	Location:	Wayland, MA	PROJECT NO.: 46047
			EXCAVATOR: The Greener Group, LLC
			INSPECTOR: Kristen Sarson
			DATE: 3/12/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown fine to coarse GRAVEL and fine to coarse SAND, trace cobbles and debris (metal, aspahlt, concrete, plastic).	<1.0
1			
2			
3			
4			
5		5-10' Dark brown fine to coarse GRAVEL and fine to coarse SAND, trace cobbles, silt, and debris (metal, aspahlt, concrete, plastic).	1.2
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project: Wayland Location: Wayland, MA	**DESIGNATION:** **PROJECT NO.:** **EXCAVATOR:** **INSPECTOR:** **DATE:**	**TP-D3** 46047 The Greener Group, LLC Kristen Sarson 3/12/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown and black fine to coarse SAND, some fine to coarse gravel and debris (large concrete slabs, a tire, asphalt, metal, wood), trace cobbles.	3.4
1			
2			
3			
4			
5		5-10' Dark brown and black fine to coarse SAND, some fine to coarse gravel and debris (large concrete slabs, asphalt, metal, wood), trace cobbles and silt.	5.1
6			
7			
8			
9			
10		10-15' Dark brown and black fine to medium SAND, some coarse sand and fine to coarse gravel, little debris (bricks, wood, concrete, asphalt, ceramics, metal), trace silt and clay.	4.2
11			
12			
13			
14			
15		Test pit terminated at 15 feet bgs. Refusal not encountered.	

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	
	Location:	Wayland, MA	
	DESIGNATION:	**TP-E3**	
	PROJECT NO.:	46047	
	EXCAVATOR:	The Greener Group, LLC	
	INSPECTOR:	Kristen Sarson	
	DATE:	3/12/2019	

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Tan fine to coarse SAND, some fine to coarse gravel, trace debris (large concrete blocks, wood, asphalt, plastic).	<1.0
1			
2			
3			
4			
5		5-10' Brown fine to medium SAND and fine GRAVEL, some coarse gravel, trace silt, clay, and debris (concrete, wood, asphalt, plastic).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	DESIGNATION: **TP-F3**
	Location:	Wayland, MA	PROJECT NO.: 46047
			EXCAVATOR: The Greener Group, LLC
			INSPECTOR: Kristen Sarson
			DATE: 3/12/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown fine to coarse SAND, some fine to coarse gravel, some silt, trace cobbles and debris (asphalt, concrete, metal, plastic, wood).	<1.0
1			
2			
3			
4			
5		5-10' Dark brown fine to coarse SAND, some fine to coarse gravel, some silt, trace cobbles and debris (asphalt, concrete, metal, plastic, wood).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	DESIGNATION: TP-E2
	Location:	Wayland, MA	PROJECT NO.: 46047
			EXCAVATOR: The Greener Group, LLC
			INSPECTOR: Kristen Sarson
			DATE: 3/12/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown fine to coarse SAND, some fine to coarse gravel, some silt, trace cobbles and debris (asphalt, concrete, metal, plastic, wood).	<1.0
1			
2			
3			
4			
5		5-10' Dark brown fine to coarse SAND, some fine to coarse gravel, some silt, trace cobbles and debris (asphalt, concrete, metal, plastic, wood).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	DESIGNATION: TP-D2
	Location:	Wayland, MA	PROJECT NO.: 46047
			EXCAVATOR: The Greener Group, LLC
			INSPECTOR: Kristen Sarson
			DATE: 3/12/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown and black fine to coarse SAND and SILT, some fine to coarse gravel, trace cobbles and debris (metal, concrete, plastic, asphalt, wood).	1.2
1			
2			
3			
4			
5		5-10' Dark brown and black fine to coarse SAND and SILT, some fine to coarse gravel, trace cobbles and debris (metal, concrete, plastic, asphalt, wood).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	DESIGNATION: TP-C2
	Location:	Wayland, MA	PROJECT NO.: 46047
			EXCAVATOR: The Greener Group, LLC
			INSPECTOR: Kristen Sarson
			DATE: 3/12/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Brown fine to coarse SAND and fine to coarse GRAVEL, trace cobbles, silt, and debris (concrete, metal, brick, glass, ceramic, asphalt).	<1.0
1			
2			
3			
4			
5		5-10' Brown fine to coarse SAND and fine to coarse GRAVEL, trace cobbles, silt, and debris (concrete, metal, brick, glass, ceramic, asphalt).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	DESIGNATION: TP-D1
	Location:	Wayland, MA	PROJECT NO.: 46047
			EXCAVATOR: The Greener Group, LLC
			INSPECTOR: Kristen Sarson
			DATE: 3/12/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown and black fine to coarse SAND, some silt and fine to coarse gravel, trace debris (concrete, asphalt, wood, metal) and cobbles.	1.1
1			
2			
3			
4			
5		5-10' Dark brown and black fine to coarse SAND, some silt and fine to coarse gravel, trace debris (concrete, asphalt, wood, metal) and cobbles.	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	DESIGNATION: TP-C1
	Location:	Wayland, MA	PROJECT NO.: 46047
			EXCAVATOR: The Greener Group, LLC
			INSPECTOR: Kristen Sarson
			DATE: 3/12/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown and black fine to coarse SAND and fine to coarse GRAVEL, some silt, trace cobbles and debris (plastic, metal, asphalt, concrete).	1.3
1			
2			
3			
4			
5		5-10' Dark brown and black fine to coarse SAND and fine to coarse GRAVEL, some silt, trace cobbles and debris (plastic, metal, asphalt, concrete).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project: Wayland Location: Wayland, MA	**DESIGNATION:** **PROJECT NO.:** **EXCAVATOR:** **INSPECTOR:** **DATE:**	**TP-B1** 46047 The Greener Group, LLC Kristen Sarson 3/12/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown fine to coarse SAND, some fine to coarse gravel, trace silt and debris (asphalt, paper, glass, concrete).	3.1
1			
2			
3			
4			
5		5-10' Dark brown fine to coarse SAND, some fine to coarse gravel, trace silt and debris (asphalt, paper, glass, concrete).	2.1
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	
	Location:	Wayland, MA	
	DESIGNATION:	**TP-B2**	
	PROJECT NO.:	46047	
	EXCAVATOR:	The Greener Group, LLC	
	INSPECTOR:	Kristen Sarson	
	DATE:	3/12/2019	

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-7' Brown fine to coarse SAND, some fine to coarse gravel, trace silt and debris (metal, plastic, asphalt).	<1.0
1			
2			
3			
4			
5		5-7' Brown fine to coarse SAND, some fine to coarse gravel, trace silt and debris (metal, plastic, asphalt).	<1.0
6			
7		7-8' Grey fine to coarse GRAVEL.	
8		8-10' Brown fine to coarse SAND, some fine to coarse gravel, trace silt and debris (metal, plastic, asphalt).	
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project:	Wayland	DESIGNATION: TP-A1
	Location:	Wayland, MA	PROJECT NO.: 46047
			EXCAVATOR: The Greener Group, LLC
			INSPECTOR: Kristen Sarson
			DATE: 3/12/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Brown fine to coarse SAND, some fine to coarse gravel, trace silt and debris (metal, plastic, asphalt).	<1.0
1			
2			
3			
4			
5		5-10' Brown fine to coarse SAND, some fine to coarse gravel, trace silt and debris (metal, plastic, asphalt).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project: Wayland Location: Wayland, MA	**DESIGNATION:** **PROJECT NO.:** **EXCAVATOR:** **INSPECTOR:** **DATE:**	**TP-A2** 46047 The Greener Group, LLC Kristen Sarson 3/12/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown fine to coarse SAND and fine to coarse GRAVEL, trace debris (brick, concrete, asphalt, fabric).	<1.0
1			
2			
3			
4			
5		5-10' Dark brown fine to coarse GRAVEL, some fine to coarse sand, trace silt and debris (brick, metal, concrete, asphalt).	<1.0
6			
7			
8			
9			
10		Test pit terminated at 10 feet bgs. Refusal not encountered.	
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project: Wayland Location: Wayland, MA	**DESIGNATION:** **PROJECT NO.:** **EXCAVATOR:** **INSPECTOR:** **DATE:**	**TP-V-101** 46047 The Greener Group, LLC Kristen Sarson 3/12/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown fine to coarse SAND, some silt, trace roots.	<1.0
1			
2			
3			
4			
5		Test pit terminated at 5 feet bgs. Refusal not encountered.	
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project: Wayland Location: Wayland, MA	**DESIGNATION:** **PROJECT NO.:** **EXCAVATOR:** **INSPECTOR:** **DATE:**	**TP-V-102** 46047 The Greener Group, LLC Kristen Sarson 3/12/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown LOAM (silt and fine sand), trace roots.	<1.0
1			
2			
3			
4			
5		Test pit terminated at 5 feet bgs. Refusal not encountered.	
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project: Wayland Location: Wayland, MA	**DESIGNATION:** **PROJECT NO.:** **EXCAVATOR:** **INSPECTOR:** **DATE:**	**TP-V-103** 46047 The Greener Group, LLC Kristen Sarson 3/12/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown LOAM (silt and fine sand), trace roots.	<1.0
1			
2			
3			
4			
5		Test pit terminated at 5 feet bgs. Refusal not encountered.	
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project: Wayland Location: Wayland, MA	**DESIGNATION:** **PROJECT NO.:** **EXCAVATOR:** **INSPECTOR:** **DATE:**	**TP-V-104** 46047 The Greener Group, LLC Kristen Sarson 3/12/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown fine to medium SAND, some silt, trace debris (one brick).	<1.0
1			
2			
3			
4			
5		Test pit terminated at 5 feet bgs. Refusal not encountered.	
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

TEST PIT LOG

VERTEX®	Project: Wayland Location: Wayland, MA	**DESIGNATION:** **PROJECT NO.:** **EXCAVATOR:** **INSPECTOR:** **DATE:**	**TP-V-105** 46047 The Greener Group, LLC Kristen Sarson 3/12/2019

DEPTH ELEVATION	NO.	SOIL DESCRIPTION	PID (PPM)
		0-5' Dark brown LOAM (fine sand and silt), landscaping fabric.	<1.0
1			
2			
3			
4			
5		Test pit terminated at 5 feet bgs. Refusal not encountered.	
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Test Pit Sketch

NORTH

See Figure 1 for test pit locations.

NOTES:

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

Project: Rivers Edge Wayland City: Wayland State: MA

V-101(MW)

VERTEX

BORING INFORMATION

Start Date:	03/26/2019
Completion Date:	03/26/2019
Personnel:	Kristen Sarson
Drilling Co.:	Geosearch
Method:	Geoprobe
Refusal (Y/N):	N

WELL CONSTRUCTION DETAILS

Well Depth (ft):	20.0
Boring Depth (ft):	20.0
Well Diameter (in):	2.00
Screen Length (ft):	'10-20
Slot Size (in):	0.010
Completion Type:	Roadbox
Casing Diameter (in):	2.0

LOCATION

Lat:	42.3640
Long:	-71.3811
TOC (ft):	
GS Elev (ft):	

NOTES

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System

2. The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in) Recovered (in/sleeve in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	Odor	PID (ppm)
	50		Sand and Silt	Dark brown and black fine SAND and SILT, some medium to coarse sand and f-c gravel, trace debris (brick, concrete).	0 feet	Dry		0.1
			Coarse to Fine Sand	Tan f-c SAND.		Damp		
5	32			Tan f-c SAND, some f-c gravel, trace silt.		Damp		0.1
10	29			Tan f-c SAND, some f-c gravel.		Damp		0.1
				Tan f-c SAND, some f-c gravel.		Wet		
15	46			Tan f-c SAND, some f-c gravel, trace silt.		Wet		0.0
20								

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SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

Project: Rivers Edge Wayland City: Wayland State: MA

V-102(MW)

VERTEX

BORING INFORMATION

Start Date:	03/26/2019
Completion Date:	03/26/2019
Personnel:	Kristen Sarson
Drilling Co.:	Geosearch
Method:	Geoprobe
Refusal (Y/N):	N

WELL CONSTRUCTION DETAILS

Well Depth (ft):	20.0
Boring Depth (ft):	20.0
Well Diameter (in):	2.00
Screen Length (ft):	'10-20
Slot Size (in):	0.010
Completion Type:	Roadbox
Casing Diameter (in):	2.0

LOCATION

Lat:	42.3642
Long:	-71.3824
TOC (ft):	
GS Elev (ft):	

NOTES

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System

2. The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in) Recovered (in/sleeve in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	Odor	PID (ppm)
	24		Medium to Fine Sand	Dark brown fine to medium SAND, some silt, trace organics (roots).	0 feet	Damp		0.1
5	28		Sand and Silt	Dark brown fine SAND and SILT, some organics (wood and roots).		Damp		0.1
			Coarse to Fine Sand	Tan fine to coarse SAND, layer of crushed stone at 8 feet bgs.		Dry		
10	30		Sand and Gravel	Tan f-c SAND and f-c GRAVEL, trace silt.		Dry		0.0
15	60			Tan f-c SAND and f-c GRAVEL, trace silt.		Wet		0.0
20								

05/50/2019

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

Project: Rivers Edge Wayland City: Wayland State: MA

V-103(MW)

VERTEX

BORING INFORMATION

Start Date:	03/27/2019
Completion Date:	03/27/2019
Personnel:	Kristen Sarson
Drilling Co.:	Geosearch
Method:	Geoprobe
Refusal (Y/N):	N

WELL CONSTRUCTION DETAILS

Well Depth (ft):	35.0
Boring Depth (ft):	35.0
Well Diameter (in):	2.00
Screen Length (ft):	'25-35
Slot Size (in):	0.010
Completion Type:	Roadbox
Casing Diameter (in):	2.0

LOCATION

Lat:	42.3636
Long:	-71.3825
TOC (ft):	
GS Elev (ft):	

NOTES

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System

2. The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in) Recovered (in/sleeve in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	Odor	PID (ppm)
	42		Fine Sands	TOPSOIL - Brown fine sand and silt, some organics (roots).	0 feet	Dry		44.3
			Sand and Silt	Light brown fine to medium SAND and SILT, trace coarse gravel.		Dry		
			Sand and Gravel	Brown f-c SAND and coarse GRAVEL, some crushed stone.		Dry		
5	43		Coarse to Fine Sand	Tan f-c SAND.		Damp		2.0
10	29			Tan f-c SAND, little coarse gravels and silt.		Damp		6.3
15	60							6.2
20	55					Damp		2.2

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SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

Project: Rivers Edge Wayland City: Wayland State: MA

V-103(MW)

Depth (ft)	Penetration (in) Recovered (in/sleeve in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	Odor	PID (ppm)
	55		Coarse to Fine Sand	Tan f-c SAND, little coarse gravel.		Damp		2.2
25	60			Tan f-c SAND, little coarse gravel.		Damp		0.6
30	60		Medium to Fine Sand	Tan fine to medium SAND, little coarse sand.		Wet		0.1
35								
40								
45								

05/50/2019

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

Project: Rivers Edge Wayland City: Wayland State: MA

V-104(MW)

VERTEX

BORING INFORMATION

Start Date:	03/26/2019
Completion Date:	03/26/2019
Personnel:	Kristen Sarson
Drilling Co.:	Geosearch
Method:	Geoprobe
Refusal (Y/N):	N

WELL CONSTRUCTION DETAILS

Well Depth (ft):	36.5
Boring Depth (ft):	36.5
Well Diameter (in):	2.00
Screen Length (ft):	'26.5-36.5
Slot Size (in):	0.010
Completion Type:	Roadbox
Casing Diameter (in):	2.0

LOCATION

Lat:	42.3635
Long:	-71.3828
TOC (ft):	
GS Elev (ft):	

NOTES

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System

2. The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in) Recovered (in/sleeve in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	Odor	PID (ppm)
	42		Sand and Silt	Grey fine SAND and SILT, trace f-c gravel.	0 feet			46.1
			Medium to Fine Sand	Tan and orange fine to medium SAND, trace f-c gravel and debris (asphalt).				
			Gravel	Crushed STONE.				
			Sand and Silt	Grey fine SAND and SILT, trace debris (asphalt).				
5	20							5.2
				Tan and orange fine to medium SAND and SILT, trace f-c gravel and debris (asphalt).				
10	30		Coarse to Fine Sand	Tan and grey f-c SAND.		Damp		12.6
15	15			Tan f-c SAND, some f-c gravel.		Dry		7.8
			Gravel	Crushed STONE.		Dry		
20	15					Dry		0.5

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SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

Project: Rivers Edge Wayland City: Wayland State: MA

V-104(MW)

Depth (ft)	Penetration (in) Recovered (in/sleeve in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	Odor	PID (ppm)
25	15		Sand and Gravel	Tan and grey f-c SAND and f-c GRAVEL.		Dry		0.5
	60		Coarse to Fine Sand	Tan and grey f-c SAND, trace f-c gravel and silt.		Dry		0.5
30	60		Sand and Gravel	Tan and grey f-c SAND and f-c GRAVEL.		Dry		0.1
			Coarse to Fine Sand	Tan f-c SAND.		Wet		
35								
40								
45								

05/50/2019

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

Project: Rivers Edge Wayland City: Wayland State: MA

V-105(MW)

VERTEX

BORING INFORMATION

Start Date: 03/27/2019
Completion Date: 03/27/2019
Personnel: Kristen Sarson
Drilling Co.: Geosearch
Method: Geoprobe
Refusal (Y/N): N

WELL CONSTRUCTION DETAILS

Well Depth (ft): 37.0
Boring Depth (ft): 37.0
Well Diameter (in): 2.00
Screen Length (ft): '27-37
Slot Size (in): 0.010
Completion Type: Roadbox
Casing Diameter (in): 2.0

LOCATION

Lat: 42.3637
Long: -71.3829
TOC (ft):
GS Elev (ft):

NOTES

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System

2. The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in) Recovered (in/sleeve in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	Odor	PID (ppm)
	32		Fine Sands	TOPSOIL - Brown fine SAND and SILT, trace organics (roots).	0 feet	Damp		0.4
			Coarse to Fine Sand	Light brown f-c SAND, some silt, trace f-c gravel.		Damp		
5	28			Light brown fine to medium SAND grading to f-c SAND, trace f-c gravel and silt.		Dry		0.4
10	48			Tan f-c SAND.		Dry		0.3
15	60							0.3
20	60					Dry		0.1

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SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

Project: Rivers Edge Wayland City: Wayland State: MA

V-105(MW)

Depth (ft)	Penetration (in) Recovered (in/sleeve in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	Odor	PID (ppm)
	60		Coarse to Fine Sand	Tan f-c SAND, trace f-c gravel.		Dry		0.1
25	60			Tan f-c SAND, trace f-c gravel.		Dry		0.1
			Sand and Silt	Tan fine SAND and SILT.				
			Gravel	Crushed STONE.		Dry		
			Medium to Fine Sand	Tan fine to medium SAND, some silt, trace coarse gravel.		Dry		
30	49			Tan fine to medium SAND, some silt and coarse sand.		Dry		0.0
			Coarse to Fine Sand	Tan f-c SAND, little f-c gravel, trace fine gravel.		Wet		
35								
40								
45								

05/50/2019

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

Project: Rivers Edge Wayland City: Wayland State: MA

V-106(MW)

VERTEX

BORING INFORMATION

Start Date:	03/27/2019
Completion Date:	03/28/2019
Personnel:	Kristen Sarson
Drilling Co.:	Geosearch
Method:	Geoprobe
Refusal (Y/N):	N

WELL CONSTRUCTION DETAILS

Well Depth (ft):	37.0
Boring Depth (ft):	37.0
Well Diameter (in):	2.00
Screen Length (ft):	'27-37
Slot Size (in):	0.010
Completion Type:	Roadbox
Casing Diameter (in):	2.0

LOCATION

Lat:	42.3637
Long:	-71.3836
TOC (ft):	
GS Elev (ft):	

NOTES

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System

2. The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in) Recovered (in/sleeve in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	Odor	PID (ppm)
					0 feet			
	43		Asphalt	ASPHALT.		Dry		0.0
			Medium to Fine Sand	Tan fine to medium SAND, trace coarse sand.		Damp		
			Gravel	Crushed STONE.		Dry		
			Coarse to Medium Sand	Tan medium to coarse SAND, trace fine sand.		Damp		
5	33			Tan medium to coarse SAND, trace fine sand.		Damp		0.7
10	60		Coarse to Fine Sand	Tan f-c SAND.		Damp		1.3
15	49			Tan f-c SAND, some coarse gravel.		Damp		0.1
20	50					Dry		0.1

05/50/2019

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

Project: Rivers Edge Wayland City: Wayland State: MA

V-106(MW)

Depth (ft)	Penetration (in) Recovered (in/sleeve in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	Odor	PID (ppm)
	50		Coarse to Fine Sand	Tan f-c SAND, trace fine gravel.		Dry		0.1
25	52		Medium to Fine Sand	Orange fine to medium SAND.		Damp		
				Orange fine to medium SAND, little coarse sand.		Damp		0.0
30	60							0.0
				Orange fine to medium SAND, little coarse sand.		Wet		
35								
40								
45								

05/50/2019

SOIL BORING

Project: Rivers Edge Wayland City: Wayland State: MA

V-107

VERTEX

BORING INFORMATION

Start Date: 03/27/2019
Completion Date: 03/27/2019
Personnel: Kristen Sarson
Drilling Co.: Geosearch
Method: Geoprobe
Refusal (Y/N): N
Boring Depth (ft): 10.0

LOCATION

Lat: -71.38259100
Long: 42.36362300
GS Elev (ft): 0.0

NOTES

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System

2. The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	Odor	PID (ppm)
0		25		Coarse to Fine Sand	Light brown f-c SAND, some f-c gravel, trace silt.	Damp		0.6
5		20		Sand and Gravel	Light brown f-c SAND and f-c GRAVEL.	Damp		2.6
10								
15								
20								

04/05/2019

SOIL BORING

Project: Rivers Edge Wayland City: Wayland State: MA

V-108

VERTEX

BORING INFORMATION

Start Date: 03/27/2019
Completion Date: 03/27/2019
Personnel: Kristen Sarson
Drilling Co.: Geosearch
Method: Geoprobe
Refusal (Y/N): N
Boring Depth (ft): 10.0

LOCATION

Lat: -71.38275400
Long: 42.36333100
GS Elev (ft): 0.0

NOTES

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System

2. The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	Odor	PID (ppm)
0		38		Medium to Fine Sand	Tan and orange fine to medium SAND, some coarse sand and coarse gravel.	Dry		2.3
5		41						1.5
10								
15								
20								

04/05/2019

SOIL BORING

Project: Rivers Edge Wayland City: Wayland State: MA

V-109

VERTEX

BORING INFORMATION

Start Date: 03/27/2019
Completion Date: 03/27/2019
Personnel: Kristen Sarson
Drilling Co.: Geosearch
Method: Geoprobe
Refusal (Y/N): N
Boring Depth (ft): 10.0

LOCATION

Lat: -71.38290300
Long: 42.36342700
GS Elev (ft): 0.0

NOTES

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System

2. The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	Odor	PID (ppm)
0		20		Asphalt	ASPHALT.	Damp		1.7
				Medium to Fine Sand	Tan and orange fine to medium SAND, some coarse sand, trace coarse gravel.			
5		50						2.1
10								
15								
20								

04/05/2019

SOIL BORING

Project: Rivers Edge Wayland City: Wayland State: MA

V-110

VERTEX

BORING INFORMATION

Start Date: 03/27/2019
Completion Date: 03/27/2019
Personnel: Kristen Sarson
Drilling Co.: Geosearch
Method: Geoprobe
Refusal (Y/N): N
Boring Depth (ft): 10.0

LOCATION

Lat: -71.38295900
Long: 42.36345700
GS Elev (ft): 0.0

NOTES

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System

2. The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	Odor	PID (ppm)
0		60		Asphalt	ASPHALT.	Dry		0.6
				Medium to Fine Sand	Tan and orange fine to medium SAND, some coarse sand, trace coarse gravel.			
5		20						1.2
10								
15								
20								

04/05/2019

SOIL BORING

Project: Rivers Edge Wayland City: Wayland State: MA

V-111

VERTEX

BORING INFORMATION

Start Date: 03/27/2019
Completion Date: 03/27/2019
Personnel: Kristen Sarson
Drilling Co.: Geosearch
Method: Geoprobe
Refusal (Y/N): N
Boring Depth (ft): 10.0

LOCATION

Lat: -71.38289600
Long: 42.36350500
GS Elev (ft): 0.0

NOTES

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System

2. The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	Odor	PID (ppm)
		43		Asphalt Medium to Fine Sand	ASPHALT. Light brown fine to medium SAND, some coarse sand and coarse gravel.	Dry		1.2
5		12						1.1
10								
15								
20								

04/05/2019

SOIL BORING

Project: Rivers Edge Wayland City: Wayland State: MA

V-112

VERTEX

BORING INFORMATION

Start Date: 03/27/2019
Completion Date: 03/27/2019
Personnel: Kristen Sarson
Drilling Co.: Geosearch
Method: Geoprobe
Refusal (Y/N): N
Boring Depth (ft): 10.0

LOCATION

Lat: -71.38305600
Long: 42.36358200
GS Elev (ft): 0.0

NOTES

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System

2. The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	Odor	PID (ppm)
0		30		Medium to Fine Sand	Brown fine to medium SAND, trace coarse sand, coarse gravel, and silt.	Damp		0.8
5		60						0.7
10								
15								
20								

04/05/2019

SOIL BORING

Project: Rivers Edge Wayland City: Wayland State: MA

V-113

VERTEX

BORING INFORMATION

Start Date: 03/28/2019
Completion Date: 03/28/2019
Personnel: Kristen Sarson
Drilling Co.: Geosearch
Method: Geoprobe
Refusal (Y/N): N
Boring Depth (ft): 10.0

LOCATION

Lat: -71.38351400
Long: 42.36347400
GS Elev (ft): 0.0

NOTES

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System

2. The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	Odor	PID (ppm)
		25		Sand and Silt	TOPSOIL- Brown fine SAND and SILT, some organics (roots).			0.0
				Medium to Fine Sand	Tan fine to medium SAND, some coarse sand, trace coarse gravel.	Damp		
5		30		Coarse to Fine Sand	Tan f-c SAND, some fine gravel.	Dry		0.1
10								
15								
20								

04/05/2019

SOIL BORING

Project: Rivers Edge Wayland City: Wayland State: MA

V-114

VERTEX

BORING INFORMATION

Start Date: 03/28/2019
Completion Date: 03/28/2019
Personnel: Kristen Sarson
Drilling Co.: Geosearch
Method: Geoprobe
Refusal (Y/N): N
Boring Depth (ft): 10.0

LOCATION

Lat: -71.38347300
Long: 42.36323300
GS Elev (ft): 0.0

NOTES

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System

2. The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	Odor	PID (ppm)
		28		Silt	TOPSOIL- Dark brown SILT and organics (roots).			0.5
				Coarse to Medium Sand	Light brown and orange medium to coarse SAND, little f-c gravel and fine sand.	Damp		
5		24						0.3
				Gravel	Grey coarse GRAVEL.	Dry		
10								
15								
20								

04/05/2019

SOIL BORING

Project: Rivers Edge Wayland City: Wayland State: MA

V-115

VERTEX

BORING INFORMATION

Start Date: 03/28/2019
Completion Date: 03/28/2019
Personnel: Kristen Sarson
Drilling Co.: Geosearch
Method: Geoprobe
Refusal (Y/N): N
Boring Depth (ft): 10.0

LOCATION

Lat: -71.38305800
Long: 42.36312000
GS Elev (ft): 0.0

NOTES

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System

2. The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	Odor	PID (ppm)
0		20		Medium to Fine Sand	Tan fine to medium SAND, trace silt and fine gravel.			0.3
5		12						0.1
10								
15								
20								

04/05/2019

SOIL BORING

Project: Rivers Edge Wayland City: Wayland State: MA

V-116

VERTEX

BORING INFORMATION

Start Date: 03/28/2019
Completion Date: 03/28/2019
Personnel: Kristen Sarson
Drilling Co.: Geosearch
Method: Geoprobe
Refusal (Y/N): N
Boring Depth (ft): 10.0

LOCATION

Lat: -71.38294100
Long: 42.36315900
GS Elev (ft): 0.0

NOTES

1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System

2. The soil was screened in the field using an photoionization detector (PID) with a 10.6 electron volt lamp calibrated to a 100 parts per million by volume (ppmv) isobutylene standard to report total organic volatiles (TOVs) as isobutylene equivalents with a response factor of 1. The PID has a detection limit of 0.1 ppmv, <1 readings are indicative of readings of 0.1 ppmv TVOCs or less.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	Odor	PID (ppm)
		40		Medium to Fine Sand	Tan fine to medium SAND, trace coarse sand and coarse gravel.	Dry		0.0
5				Gravel	Grey coarse GRAVEL and crushed stone.	Dry		
		21		Medium to Fine Sand	Tan fine to medium SAND, trace coarse sand and coarse gravel.	Dry		0.0
10								
15								
20								

04/05/2019

V-301-MW
V-302-MW
V-303-MW
V-304-MW
V-305-MW
V-306-MW

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-301-MW

Project: Wood Partners City: Wayland State: MA

BORING INFORMATION

Start/Completion Date: 09/30/2021 / 09/30/2021
Personnel: Shelby, Amsel
Drilling Co.: Geosearch
Method: Direct Push
Boring Depth (ft): 25.0

WELL CONSTRUCTION DETAILS

Well Depth (ft): 25.0
Welll Diameter (in): 2.0
Screen Length (ft): 25.0
Slot Size (in): 0.010
Completion Type: Geosearch
Casing Diameter (in):

VERTEX

LOCATION

Datum:
Lat:
Long:
GS Elev (ft):
TOC (ft):

NOTES

Soil were visually classified in general accordance with the Modified Burmister Soil Classification System.
PID screening as follows: Tiger PID; 10.6 eV; RF of 1; a DL of 0.1 ppmV; calibration 100 ppmV isobutylene.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	PID (parts per million by volume)
10	60	45		Medium Sand	0"-15" Tan (Very Pale Brown) MEDIUM SAND, Some Gravel, No Odor.	Dry	16.8
					15"-45" Tan (Very Pale Brown) MEDIUM SAND, No Odor.	Dry	13.7
15	60	60		Coarse Sand	0"-36" Tan (Very Pale Brown) COARSE SAND, No Odor.	Dry	10.3
					36"-60" Brown COARSE SAND, AND Tan (Very Pale Brown) GRAVEL, No Odor.	Moist	1.8
20	60	60				Wet	1.1

10/27/2021

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-302-MW

Project: Wood Partners City: Wayland State: MA

BORING INFORMATION

Start/Completion Date: 09/30/2021 / 09/30/2021
Personnel: Shelby, Amsel
Drilling Co.: Geosearch
Method: Direct Push
Boring Depth (ft): 37.0

WELL CONSTRUCTION DETAILS

Well Depth (ft): 37.0
Welll Diameter (in): 2.0
Screen Length (ft): 37.0
Slot Size (in): 0.010
Completion Type: Geosearch
Casing Diameter (in):

VERTEX

LOCATION

Datum:
Lat:
Long:
GS Elev (ft):
TOC (ft):

NOTES

Soil were visually classified in general accordance with the Modified Burmister Soil Classification System.
PID screening as follows: Tiger PID; 10.6 eV; RF of 1; a DL of 0.1 ppmV; calibration 100 ppmV isobutylene.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
5								
10								
15								
20								

10/27/2021

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

Project: Wood Partners City: Wayland State: MA

V-302-MW

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
25	60	45		Medium to Coarse Sand	0"-45" Tan (Very Pale Brown) MEDIUM TO COARSE SAND, No Odor.		Moist	0.4
30	60	50		Coarse Sand	0"-50" Reddish Yellow COARSE SAND, No Odor.		Wet	0.3
35	24	24			0"-24" Reddish Yellow COARSE SAND, No Odor.		Wet	0.2
40								
45								

10/27/2021

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-303-MW

Project: Wood Partners City: Wayland State: MA

BORING INFORMATION

Start/Completion Date: 09/30/2021 / 09/30/2021
Personnel: Shelby, Amsel
Drilling Co.: Geosearch
Method: Direct Push
Boring Depth (ft): 39.4

WELL CONSTRUCTION DETAILS

Well Depth (ft): 37.0
Welll Diameter (in): 2.0
Screen Length (ft): 37.0
Slot Size (in): 0.010
Completion Type: Geosearch
Casing Diameter (in):

VERTEX

LOCATION

Datum:
Lat:
Long:
GS Elev (ft):
TOC (ft):

NOTES

Soil were visually classified in general accordance with the Modified Burmister Soil Classification System.
PID screening as follows: Tiger PID; 10.6 eV; RF of 1; a DL of 0.1 ppmV; calibration 100 ppmV isobutylene.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
5								
10								
15								
20								

10/27/2021

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

Project: Wood Partners City: Wayland State: MA

V-303-MW

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
25	60	60		Coarse Sand	0"-60" Tan (Very Pale Brown) COARSE SAND, Little Gravel, No Odor.		Moist	0.2
30	60	45			0"-30" Reddish Yellow COARSE SAND, No Odor.		Wet	0.3
				Fine to Coarse Sand	30"-45" Light Brownish Gray FINE TO COARSE SAND, AND SILT, No Odor.		Wet	0.2
35	24	24		Medium to Coarse Sand	0"-24" Light Brownish Gray MEDIUM TO COARSE SAND, AND SILT, No Odor.		Wet	0.2
40								
45								

10/27/2021

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-304-MW

Project: Wood Partners City: Wayland State: MA

BORING INFORMATION

Start/Completion Date: 10/01/2021 / 10/01/2021
Personnel: Shelby, Amsel
Drilling Co.: Geosearch
Method: Direct Push
Boring Depth (ft): 15.0

WELL CONSTRUCTION DETAILS

Well Depth (ft): 15.0
Welll Diameter (in): 2.0
Screen Length (ft): 15.0
Slot Size (in): 0.010
Completion Type: Geosearch
Casing Diameter (in):

VERTEX

LOCATION

Datum:
Lat:
Long:
GS Elev (ft):
TOC (ft):

NOTES

Soil were visually classified in general accordance with the Modified Burmister Soil Classification System.
PID screening as follows: Tiger PID; 10.6 eV; RF of 1; a DL of 0.1 ppmV; calibration 100 ppmV isobutylene.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
	60	60		Sand and Silt	0"-36" Light Brown SAND AND SILT, No Odor.		Dry	2.3
				Fine Sand	36"-60" Tan (Very Pale Brown) FINE SAND, No Odor.		Dry	3.9
5	60	60		Fine to Medium Sand	0"-60" Light Redish Brown FINE TO MEDIUM SAND, No Odor.		Moist	1.1
10	60	60		Sand and Silt	0"-36" Yellowish Brown SILT AND SAND, No Odor.		Wet	1
				Fine to Coarse Sand	36"-60" Reddish Brown FINE TO COARSE SAND, AND SILT, No Odor.		Wet	0.8
15								
20								

10/27/2021

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

Project: Wood Partners City: Wayland State: MA

V-305-MW

BORING INFORMATION

Start/Completion Date: 10/01/2021 / 10/01/2021
Personnel: Shelby, Amsel
Drilling Co.: Geosearch
Method: Direct Push
Boring Depth (ft): 20.0

WELL CONSTRUCTION DETAILS

Well Depth (ft): 20.0
Welll Diameter (in): 2.0
Screen Length (ft): 20.0
Slot Size (in): 0.010
Completion Type: Geosearch
Casing Diameter (in):

VERTEX

LOCATION

Datum:
Lat:
Long:
GS Elev (ft):
TOC (ft):

NOTES

Soil were visually classified in general accordance with the Modified Burmister Soil Classification System.
PID screening as follows: Tiger PID; 10.6 eV; RF of 1; a DL of 0.1 ppmV; calibration 100 ppmV isobutylene.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
	60	30		Fine to Medium Sand	0"-20" Brown FINE TO MEDIUM SAND, Some Gravel, Some Silt, No Odor.		Dry	16
				Medium Sand	20"-30" Light Reddish Brown MEDIUM SAND, No Odor.		Dry	0.7
5	60	50			0"-50" Light Yellowish Brown MEDIUM SAND, Little Gravel, No Odor.		Dry	0.2
10	60	55		Medium to Coarse Sand	0"-40" Light Brown MEDIUM TO COARSE SAND, No Odor.		Dry to Damp	0
				Sand and Gravel	40"-55" Light Brown SAND AND GRAVEL, No Odor.		Wet	0
15	60	60						0
20								

10/27/2021

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-306-MW

Project: Wood Partners City: Wayland State: MA

BORING INFORMATION

Start/Completion Date: 10/01/2021 / 10/01/2021
Personnel: Shelby, Amsel
Drilling Co.: Geosearch
Method: Direct Push
Boring Depth (ft): 39.7

WELL CONSTRUCTION DETAILS

Well Depth (ft): 37.0
Welll Diameter (in): 2.0
Screen Length (ft): 37.0
Slot Size (in): 0.010
Completion Type: Geosearch
Casing Diameter (in):

VERTEX

LOCATION

Datum:
Lat:
Long:
GS Elev (ft):
TOC (ft):

NOTES

Soil were visually classified in general accordance with the Modified Burmister Soil Classification System.
PID screening as follows: Tiger PID; 10.6 eV; RF of 1; a DL of 0.1 ppmV; calibration 100 ppmV isobutylene.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
5								
10								
15								
20								

10/27/2021

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

Project: Wood Partners City: Wayland State: MA

V-306-MW

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
25	60	40		Fine to Medium Sand	0"-40" Light Brown FINE TO MEDIUM SAND, No Odor.		Dry	0.2
30	60	45		Fine to Coarse Sand	0"-45" Brown FINE TO COARSE SAND, AND CLAYEY SILT, No Odor.		Moist	0.1
35	24	24			0"-24" Brown FINE TO COARSE SAND, AND CLAYEY SILT, No Odor.		Wet	0
40								
45								

10/27/2021

V-301-MW
V-302-MW
V-303-MW
V-304-MW
V-305-MW
V-306-MW

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-301-MW

Project: Wood Partners City: Wayland State: MA

BORING INFORMATION

Start/Completion Date: 09/30/2021 / 09/30/2021
Personnel: Shelby, Amsel
Drilling Co.: Geosearch
Method: Direct Push
Boring Depth (ft): 25.0

WELL CONSTRUCTION DETAILS

Well Depth (ft): 25.0
Welll Diameter (in): 2.0
Screen Length (ft): 25.0
Slot Size (in): 0.010
Completion Type: Geosearch
Casing Diameter (in):

VERTEX

LOCATION

Datum:
Lat:
Long:
GS Elev (ft):
TOC (ft):

NOTES

Soil were visually classified in general accordance with the Modified Burmister Soil Classification System.
PID screening as follows: Tiger PID; 10.6 eV; RF of 1; a DL of 0.1 ppmV; calibration 100 ppmV isobutylene.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Moisture	PID (parts per million by volume)
10	60	45		Medium Sand	0"-15" Tan (Very Pale Brown) MEDIUM SAND, Some Gravel, No Odor.	Dry	16.8
					15"-45" Tan (Very Pale Brown) MEDIUM SAND, No Odor.	Dry	13.7
15	60	60		Coarse Sand	0"-36" Tan (Very Pale Brown) COARSE SAND, No Odor.	Dry	10.3
					36"-60" Brown COARSE SAND, AND Tan (Very Pale Brown) GRAVEL, No Odor.	Moist	1.8
20	60	60				Wet	1.1

10/27/2021

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-302-MW

Project: Wood Partners City: Wayland State: MA

BORING INFORMATION

Start/Completion Date: 09/30/2021 / 09/30/2021
Personnel: Shelby, Amsel
Drilling Co.: Geosearch
Method: Direct Push
Boring Depth (ft): 37.0

WELL CONSTRUCTION DETAILS

Well Depth (ft): 37.0
Welll Diameter (in): 2.0
Screen Length (ft): 37.0
Slot Size (in): 0.010
Completion Type: Geosearch
Casing Diameter (in):

VERTEX

LOCATION

Datum:
Lat:
Long:
GS Elev (ft):
TOC (ft):

NOTES

Soil were visually classified in general accordance with the Modified Burmister Soil Classification System.
PID screening as follows: Tiger PID; 10.6 eV; RF of 1; a DL of 0.1 ppmV; calibration 100 ppmV isobutylene.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
5								
10								
15								
20								

10/27/2021

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

Project: Wood Partners City: Wayland State: MA

V-302-MW

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
25	60	45		Medium to Coarse Sand	0"-45" Tan (Very Pale Brown) MEDIUM TO COARSE SAND, No Odor.		Moist	0.4
30	60	50		Coarse Sand	0"-50" Reddish Yellow COARSE SAND, No Odor.		Wet	0.3
35	24	24			0"-24" Reddish Yellow COARSE SAND, No Odor.		Wet	0.2
40								
45								

10/27/2021

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-303-MW

Project: Wood Partners City: Wayland State: MA

BORING INFORMATION

Start/Completion Date: 09/30/2021 / 09/30/2021
Personnel: Shelby, Amsel
Drilling Co.: Geosearch
Method: Direct Push
Boring Depth (ft): 39.4

WELL CONSTRUCTION DETAILS

Well Depth (ft): 37.0
Welll Diameter (in): 2.0
Screen Length (ft): 37.0
Slot Size (in): 0.010
Completion Type: Geosearch
Casing Diameter (in):

VERTEX

LOCATION

Datum:
Lat:
Long:
GS Elev (ft):
TOC (ft):

NOTES

Soil were visually classified in general accordance with the Modified Burmister Soil Classification System.
PID screening as follows: Tiger PID; 10.6 eV; RF of 1; a DL of 0.1 ppmV; calibration 100 ppmV isobutylene.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
5								
10								
15								
20								

10/27/2021

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

Project: Wood Partners City: Wayland State: MA

V-303-MW

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
25	60	60		Coarse Sand	0"-60" Tan (Very Pale Brown) COARSE SAND, Little Gravel, No Odor.		Moist	0.2
30	60	45			0"-30" Reddish Yellow COARSE SAND, No Odor.		Wet	0.3
				Fine to Coarse Sand	30"-45" Light Brownish Gray FINE TO COARSE SAND, AND SILT, No Odor.		Wet	0.2
35	24	24		Medium to Coarse Sand	0"-24" Light Brownish Gray MEDIUM TO COARSE SAND, AND SILT, No Odor.		Wet	0.2
40								
45								

10/27/2021

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-304-MW

Project: Wood Partners City: Wayland State: MA

BORING INFORMATION

Start/Completion Date: 10/01/2021 / 10/01/2021
Personnel: Shelby, Amsel
Drilling Co.: Geosearch
Method: Direct Push
Boring Depth (ft): 15.0

WELL CONSTRUCTION DETAILS

Well Depth (ft): 15.0
Welll Diameter (in): 2.0
Screen Length (ft): 15.0
Slot Size (in): 0.010
Completion Type: Geosearch
Casing Diameter (in):

VERTEX

LOCATION

Datum:
Lat:
Long:
GS Elev (ft):
TOC (ft):

NOTES

Soil were visually classified in general accordance with the Modified Burmister Soil Classification System.
PID screening as follows: Tiger PID; 10.6 eV; RF of 1; a DL of 0.1 ppmV; calibration 100 ppmV isobutylene.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
	60	60		Sand and Silt	0"-36" Light Brown SAND AND SILT, No Odor.		Dry	2.3
				Fine Sand	36"-60" Tan (Very Pale Brown) FINE SAND, No Odor.		Dry	3.9
5	60	60		Fine to Medium Sand	0"-60" Light Redish Brown FINE TO MEDIUM SAND, No Odor.		Moist	1.1
10	60	60		Sand and Silt	0"-36" Yellowish Brown SILT AND SAND, No Odor.		Wet	1
				Fine to Coarse Sand	36"-60" Reddish Brown FINE TO COARSE SAND, AND SILT, No Odor.		Wet	0.8
15								
20								

10/27/2021

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

Project: Wood Partners City: Wayland State: MA

V-305-MW

BORING INFORMATION

Start/Completion Date: 10/01/2021 / 10/01/2021
Personnel: Shelby, Amsel
Drilling Co.: Geosearch
Method: Direct Push
Boring Depth (ft): 20.0

WELL CONSTRUCTION DETAILS

Well Depth (ft): 20.0
Welll Diameter (in): 2.0
Screen Length (ft): 20.0
Slot Size (in): 0.010
Completion Type: Geosearch
Casing Diameter (in):

VERTEX

LOCATION

Datum:
Lat:
Long:
GS Elev (ft):
TOC (ft):

NOTES

Soil were visually classified in general accordance with the Modified Burmister Soil Classification System.
PID screening as follows: Tiger PID; 10.6 eV; RF of 1; a DL of 0.1 ppmV; calibration 100 ppmV isobutylene.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
	60	30		Fine to Medium Sand	0"-20" Brown FINE TO MEDIUM SAND, Some Gravel, Some Silt, No Odor.		Dry	16
				Medium Sand	20"-30" Light Reddish Brown MEDIUM SAND, No Odor.		Dry	0.7
5	60	50			0"-50" Light Yellowish Brown MEDIUM SAND, Little Gravel, No Odor.		Dry	0.2
10	60	55		Medium to Coarse Sand	0"-40" Light Brown MEDIUM TO COARSE SAND, No Odor.		Dry to Damp	0
				Sand and Gravel	40"-55" Light Brown SAND AND GRAVEL, No Odor.		Wet	0
15	60	60						0
20								

10/27/2021

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

V-306-MW

Project: Wood Partners City: Wayland State: MA

BORING INFORMATION

Start/Completion Date: 10/01/2021 / 10/01/2021
Personnel: Shelby, Amsel
Drilling Co.: Geosearch
Method: Direct Push
Boring Depth (ft): 39.7

WELL CONSTRUCTION DETAILS

Well Depth (ft): 37.0
Welll Diameter (in): 2.0
Screen Length (ft): 37.0
Slot Size (in): 0.010
Completion Type: Geosearch
Casing Diameter (in):

VERTEX

LOCATION

Datum:
Lat:
Long:
GS Elev (ft):
TOC (ft):

NOTES

Soil were visually classified in general accordance with the Modified Burmister Soil Classification System.
PID screening as follows: Tiger PID; 10.6 eV; RF of 1; a DL of 0.1 ppmV; calibration 100 ppmV isobutylene.

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
5								
10								
15								
20								

10/27/2021

SOIL BORING/MONITORING WELL CONSTRUCTION LOGS

Project: Wood Partners City: Wayland State: MA

V-306-MW

Depth (ft)	Penetration (in)	Recovered (in)	Blow Count (6 in) (1,2,3,4)	Strata	Soil Description	Well Construction	Moisture	PID (parts per million by volume)
25	60	40		Fine to Medium Sand	0"-40" Light Brown FINE TO MEDIUM SAND, No Odor.		Dry	0.2
30	60	45		Fine to Coarse Sand	0"-45" Brown FINE TO COARSE SAND, AND CLAYEY SILT, No Odor.		Moist	0.1
35	24	24			0"-24" Brown FINE TO COARSE SAND, AND CLAYEY SILT, No Odor.		Wet	0
40								
45								

10/27/2021