RELEASE ABATEMENT MEASURE PLAN

SOIL REMOVAL IN SUPPORT OF CONCRETE PAD CONSTRUCTION

New Bedford High School
230 Hathaway Boulevard
New Bedford, Massachusetts

Release Tracking Number 4-15685

Prepared for:

New Bedford Public Schools
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Acronyms

ACEC	Areas of Critical Environmental Concern
AUL	Activity and Use Limitation
BETA	BETA Group, Incorporated
BOL	Bill of Lading
CAM	Compendium of Analytical Methods
cm/sec	centimeters per second
DOT	Department of Transportation
DFFM	Department of Public Facilities
DPI	Department of Public Infrastructure
EPA	United States Environmental Protection Agency
EPCs	Exposure Point Concentrations
GPS	Global Positioning System
HASP	Health and Safety Plan
KMS	Keith Middle School
LSP	Licensed Site Professional
MassDEP	Massachusetts Department of Environmental Protection
MassGIS	Massachusetts Geographic Information System
MCP	Massachusetts Contingency Plan
msl	mean sea level
MSR	Material Shipping Record
NBHS	New Bedford High School
OHM	Oil and/or Hazardous Materials
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PID	Photoionization Detector
PPE	Personal Protective Equipment
RAM	Release Abatement Measure
RAO	Response Action Outcome
RCRA	Resource Conservation and Recovery Act
RTN	Release Tracking Number
SMP	Soil Management Plan
SOP	Standard Operating Procedure
SVOC	Semivolatile Organic Compound
TCLP	Toxicity Characteristics Leaching Procedure
TPH	Total Petroleum Hydrocarbon
TRC	TRC Environmental Corporation
USGS	United States Geological Survey
VHB	Vanasse Hangen Brustlin, Incorporated
VOC	Volatile Organic Compound

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1.0 INTRODUCTION

TRC Environmental Corporation (TRC) prepared this Release Abatement Measure (RAM) Plan per the Massachusetts Contingency Plan (MCP; 310 CMR 40.0000). The RAM Plan was prepared for submittal to the Massachusetts Department of Environmental Protection (MassDEP) on behalf of the City of New Bedford's (City's) Department of Environmental Stewardship and New Bedford Public Schools for limited shallow soil removal activities in support of concrete equipment pad construction at the New Bedford High School (NBHS) Campus located at 230 Hathaway Boulevard in New Bedford, Massachusetts (the "Site"; Map 75 Block 12, Map 69 Block 345 and Map 70 Block 1). The NBHS Campus is part of the disposal site being managed under MassDEP Release Tracking Number (RTN) 4-15685. The location of the Site is shown on Figure 1.

The proposed RAM activities include the following:

- Site preparation activities (e.g., as needed survey, utility clearance, safety, security and erosion/sedimentation control measures, etc.);
- Limited soil excavation in the vicinity of the "Green House" portion of A-Block and the administrative offices (C-Block) within the west-central portion of the NBHS Campus;
- Temporary stockpiling and stockpile management (as needed). Alternatively the material may be direct loaded and removed from the Site;
- Off-site transportation of impacted material for reuse, recycling and/or disposal;
- Construction of a concrete pad to support installation of an air cooled condenser;
- Site restoration activities (e.g., final grading, reseeding, removal of safety, security and erosion/sedimentation control measures, etc.).

Prior to remedial activities implemented at the NBHS Campus include the completion of a RAM in support of risk reduction. The previous remedial activities included supplemental soil sampling to refine the delineation of impacted areas and to support remedial planning. Soil sampling was conducted along concentric rings (i.e., step-out sampling) around sampling locations identified for potential excavation. The supplemental sampling investigation was performed to pre-define excavation boundaries. During the supplemental soil data collection and concurrent remedial planning phase, the remedial goals were exposure point concentrations (EPCs) less than or equal to Method 1/Method 2 S-1 soil standards focused on a vertical depth of up to three feet below ground surface in unpaved areas (i.e., targeting currently accessible soils). A summary of supplemental environmental sampling activities completed throughout the exterior of the NBHS Campus is presented in the Phase II (TRC, 2011c).

Areas were identified for targeted soil removal or installation/expansion of paving exposure barriers throughout the NBHS Campus. Following soil removal in areas targeted for remediation or prevention of direct contact exposure, including supplemental excavation activities described in the RAM Completion Report (TRC, 2014b), a Method 1/Method 2 risk characterization approach was used to demonstrate that a Condition of No Significant Risk exists for soil at the NBHS Campus for the top 3 feet of soil in unpaved areas, which was then verified using a

Method 3 risk characterization approach. A Condition of No Significant Risk has been achieved for the top 3 feet of soils in unpaved areas; however an Activity and Use Limitation (AUL) needs to be placed on the property to control certain site uses and activities and to mitigate/control potential exposure to impacted soils greater than three feet below ground surface in unpaved areas and below paved surfaces where impacted soils are present at shallower depths. The post-remediation risk characterization and associated AUL documentation will be documented in a separate permanent solution document for the NBHS Campus.

The RAM activities described herein are consistent with 310 CMR 40.0444 of the MCP and will be will be implemented consistent with the current understanding of shallow soil conditions throughout the NBHS Campus, particularly in the vicinity of A-Block ("Green House") and C-Block of the NBHS building.

1.1 Background Information

The following provides a brief summary of the Site background, including Site description and investigation history, leading to design and implementation of the RAM-related scope of work described herein.

Site Description

The NBHS Campus is composed of the following land parcels in the City of New Bedford: Map 75 Block 12, Map 69 Block 345 and Map 70 Block 1. The NBHS Campus is located on the north side of Parker Street between Hathaway Boulevard to the west and Liberty Street to the east. The NBHS Campus is bordered by the Hetland Rink Property to the north. A Site location map is provided as Figure 1.

Review of the United States Geological Survey (USGS) Topographic Quadrangles for New Bedford South dated 1977 and New Bedford North dated 1979 indicates that the NBHS Campus is located at approximately 90 feet above mean sea level (msl). The NBHS Campus topography is level with hills to the east and west. New Bedford Harbor is located approximately 1.3 miles east of the NBHS Campus.

NBHS consists of a single 529,192 square foot building (with a footprint of approximately 233,903 square feet) including three main areas (i.e., series of four "Houses", auditorium and gym/pool). The NBHS building is surrounded by paved parking areas and road/pathways, lawn and landscaped areas for recreational use, and paved tennis courts.

Investigation History

As described previously, the NBHS Campus is being managed under RTN 4-15685. The disposal site was subject to land disturbance or disposal activity in the 1930s through the 1960s. Historical documentation indicates that the area was an undeveloped wetland prior to the land disturbance or disposal activities.

Supplemental environmental sampling was conducted to obtain additional data and supplement previous work at the NBHS Campus by Vanasse Hangen Brustlin, Incorporated (VHB) and the BETA Group, Incorporated (BETA), and to refine the delineation of impacted soil areas and support remedial planning. The Phase II (TRC, 2011) presents a detailed description of the NBHS Campus investigative history, previous IRA activities, geologic and hydrologic conditions and the nature and extent of impacts.

Prior investigation and remedial activities were described in the following reports submitted to MassDEP by the City:

- *Release Abatement Measure Plan – Soil Excavation and Removal, New Bedford High School, New Bedford, Massachusetts.* April 2011 (TRC, 2011a)
- *Release Abatement Measure Plan Modification – Soil Excavation and Removal, New Bedford High School, New Bedford, Massachusetts.* July 2011 (TRC, 2011b)
- *Phase II Comprehensive Site Assessment, New Bedford High School Campus at the Parker Street Waste Site, New Bedford, Massachusetts.* April 2011 (TRC, 2011c)
- *Release Abatement Measure Status Report – Soil Excavation and Removal, New Bedford High School, New Bedford, Massachusetts.* August 2011 (TRC, 2011d)
- *Release Abatement Measure Status Report – Soil Excavation and Removal, New Bedford High School, New Bedford, Massachusetts.* February 2012 (TRC, 2012a)
- *Release Abatement Measure Status Report – Soil Excavation and Removal, New Bedford High School, New Bedford, Massachusetts.* August 2012 (TRC, 2012b)
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- *Release Abatement Measure Status Report – Soil Excavation and Removal, New Bedford High School, New Bedford, Massachusetts.* September 2013 (TRC, 2013b)
- *Release Abatement Measure Status Report – Soil Excavation and Removal, New Bedford High School, New Bedford, Massachusetts.* February 2014 (TRC, 2014a)
- *Release Abatement Completion Report – Soil Excavation and Removal at New Bedford High School, New Bedford, Massachusetts.* July 2014 (TRC, 2014b)

RAM Scope of Work

Work to be performed under this RAM includes:

- Site preparation activities (e.g., as needed survey, utility clearance, safety, security and erosion/sedimentation control measures, etc.);
- Limited soil excavation in the vicinity of the "Green House" portion of A-Block and the administrative offices (C-Block) within the west-central portion of the NBHS Campus;
- Temporary stockpiling and stockpile management (as needed). Alternatively the material may be direct loaded and removed from the Site;

- Off-site transportation of impacted material for reuse, recycling and/or disposal;
- Construction of a concrete pad to support installation of an air cooled condenser;
- Site restoration activities (e.g., final grading, reseeding, removal of safety, security and erosion/sedimentation control measures, etc.).

The remaining sections of this RAM Plan include information pertaining to the following:

- Party undertaking the RAM (Section 2);
- Release description, Site conditions and surrounding receptors (Section 3);
- Objective, plan and implementation schedule of the RAM (Section 4);
- Information pertaining to remediation waste management (Section 5);
- Environmental monitoring (Section 6);
- Federal, State, and Local permits (Section 7);
- Seal and signature of the Licensed Site Professional (Section 8);
- Certification of financial resources (Section 9);
- Relevant information (Section 10); and
- References (Section 11).

Supporting appendices include: soil boring logs (Appendix A), Soil Management Plan (SMP; Appendix B) and copies of the municipal notification letters (Appendix C).

1.2 Regulatory Status

The Site is being managed under RTN 4-15685. In April 2014, the City submitted a Tier Classification to MassDEP for RTN 4-15685. The Tier Classification, which included a summary of compliance history and a Conceptual Phase II Scope of Work, was submitted in accordance with the proposed amendments to the MCP (310 CMR 40.0510)[1]. RTN 4-15685 was given a Tier II Classification consistent with the criteria provided in 310 CMR 40.0520(2) of the revised MCP (MassDEP, 2014).

This RAM applies only to a limited portion of the NBHS Campus.

[1] Final amendments were published on April 25, 2014 with an effective date of June 20, 2014. The City received concurrence from MassDEP to submit the Tier Classification consistent with the proposed amendments in advance of the final published and effective dates.

2.0 PARTY UNDERTAKING THE RAM

The City's Environmental Stewardship in conjunction with New Bedford Public Schools and Siemens will be responsible for conducting the RAM. In addition, the City's Department of Environmental Stewardship will coordinate environmental oversight. The contact persons for the Department of Environmental Stewardship and New Bedford Public Schools are listed below.

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David Sullivan will serve as the Licensed Site Professional (LSP) and oversee the RAM for the City.

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3.0 RELEASE DESCRIPTION, SITE CONDITIONS & SURROUNDING RECEPTORS

3.1 Site Description

The subject of this RAM Plan occupies less than 0.01 acres (approximately 250 square feet) and is located in the vicinity of the "Green House" portion of A-Block and the administrative offices (C-Block) within the west-central portion of the NBHS Campus. A Site location map is provided as Figure 1.

3.2 Site Conditions

The NBHS Campus is generally underlain by topsoil and up to approximately 6 feet of material that includes sandy soil with ash. In places, the ash includes broken glass, brick fragments, rubber, clinkers, coal, cinders, plastic and/or metallic fragments. Traces of land disturbance or disposal related fill were identified in soils 6 inches below ground surface, with a defined layer of fill identified at 24 inches to 36 inches below ground surface. Disposal-related fill thickness across the NBHS Campus ranges from 0.1 feet to 11.0 feet. Anthropogenic fill materials within the NBHS Campus are underlain by approximately 0.25 to 6.0 feet of native dark brown organic peat material, mixed with silt and clay in places from the wetland that predates the development of the area. Native soils below the organic peat are characterized by gray fine silty sands with trace gravel and/or medium sand in places.

Observation of NBHS Campus soils and review of historic topographic maps indicates that the surficial geology consists of glacial outwash sediments. Drumlins flank the NBHS Campus to the east and west.

Based on review of the USGS Bedrock Geologic Map of Massachusetts (Zen et al., 1983), bedrock beneath the NBHS Campus is light gray, pinkish-gray to tan, mafic-poor granite known as Alaskite.

Based on literature values, the peat layer is expected to exhibit low hydraulic conductivity, on the range of 10^{-6} to 10^{-3} centimeters per second (cm/sec), while glacial outwash deposits having relatively less fine material could exhibit a hydraulic conductivity range of 10^{-3} to 15 cm/sec. The hydraulic conductivity of the ash fill could be as low as approximately 4.4×10^{-5} cm/sec with higher hydraulic conductivities (10^{-1} cm/sec) a possibility depending on the relative amounts of sand and ash. Since the deposition in the fill material is fairly loose, based on observations made during boring advancement, the hydraulic conductivity of the fill material is estimated to be higher than the underlying peat layer.

The City of New Bedford receives an average of 50.81 inches of precipitation annually (http://www.usclimatedata.com). There are no surface water bodies at the NBHS Campus.

3.3 Surrounding Receptors

The NBHS Campus Site lies within 500 feet of residential properties and the following properties and land uses:

- The Paul F. Walsh Memorial Field Athletic Complex (Walsh Field) is located to the south of the NBHS Campus across Parker Street;
- The Department of Public Infrastructure (DPI) garages are located south of Parker Street and to the east of Walsh Field;
- A church is located at the intersection of Parker Street and Hathaway Boulevard;
- An apartment complex and indoor rock climbing gym are located across Parker Street from the southwest corner of the NBHS Campus;
- The Keith Middle School (KMS) is located to the west of the NBHS Campus across Hathaway Boulevard;
- City-owned currently vacant properties are located south of the KMS Campus and west of the NBHS Campus;
- The Hetland Memorial Skating Rink is located to the north of the NBHS Campus;
- A Department of Public Facilities (DFFM)/DPI storage area is located east of the NBHS Campus across Liberty Street; and
- The Oakgrove Cemetery is located to the east of the NBHS Campus, beyond the DPI/DFFM storage area.

Groundwater categories at the NBHS Campus include actual or potential GW-2, depending upon proximity to occupied structures (groundwater is generally encountered at approximately 2 to 10 feet below ground surface based on groundwater monitoring well installations at NBHS), and GW-3, which applies to all groundwater throughout the Commonwealth.

Based on review of on-line MassDEP Priority Resource Map data available from Massachusetts Geographic Information System (MassGIS), the NBHS Campus is not located within a Current or Potential Drinking Water Source Area (MassGIS, 2008).

The NBHS Campus Site is not located in a wetland resource area. No other documented sensitive ecological receptor areas (e.g., Areas of Critical Environmental Concern [ACECs]) are known to be located at or near the NBHS Campus. No municipal or residential wells are known to be within 500 feet of the NBHS Campus (Figure 2).

3.4 Release Description

The disposal site managed as RTN 4-15685 was subject to land disturbance or disposal activity in the 1930s through at least the 1960s. Historical documentation indicates that the site was an undeveloped wetland prior to the land disturbance or disposal activities. The nature and extent of impacted soil, discussed as separate exposure point areas based on the identification of varied

activities and uses throughout the different areas of the NBHS Campus and is described in detail in the Phase II (TRC, 2011c).

3.4.1 Overview of Investigation and Remediation History

The Phase II (TRC, 2011) presents a detailed description of the NBHS Campus investigative history, previous IRA activities, geologic and hydrologic conditions and the nature and extent of impacts.

Prior investigation and remedial activities were described in the following reports submitted to MassDEP by the City:

- *Release Abatement Measure Plan – Soil Excavation and Removal, New Bedford High School, New Bedford, Massachusetts.* April 2011 (TRC, 2011a)
- Release Abatement Measure Plan Modification – *Soil Excavation and Removal, New Bedford High School, New Bedford, Massachusetts.* July 2011 (TRC, 2011b)
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- *Release Abatement Completion Report – Soil Excavation and Removal at New Bedford High School, New Bedford, Massachusetts.* July 2014 (TRC, 2014b)

As described previously, the NBHS Campus is part of the Site being managed under RTN 4-15685. The Site was subject to land disturbance or disposal activity in the 1930s through at least the 1960s. Historical documentation indicates that the Site was an undeveloped wetland prior to the land disturbance or disposal activities.

Supplemental environmental sampling was conducted by TRC to obtain additional data gaps and supplement previous work at the Site by VHB and the BETA, and to refine the delineation of impacted soil areas and support remedial planning. A portion of the supplemental sampling was performed at BETA sampling locations that were only analyzed for polychlorinated biphenyls (PCBs), and a composite was collected from two or three locations for the analysis of metals. If

the BETA results indicated elevated levels of metals in a composite sample, then TRC collected individual samples in the vicinity of the sample locations that comprised the composite analyzed by BETA to further evaluate those sample locations.

The evaluation and delineation of impacted soil in the landscaped areas focused on the 0 to 1 foot below ground surface horizon, 1 to 3 feet below ground surface horizon, and greater than 3 feet below ground surface horizon. The 0 to 1 foot horizon is considered to be directly accessible with a high potential for contact by people. The 1 to 3 feet horizon is considered to be not immediately accessible, with lower potential for contact by people (potential for contact by maintenance or construction personnel when performing activities that require digging below the ground surface exists).

All analyses of soil samples submitted by TRC for polycyclic aromatic hydrocarbons (PAHs), PCB Aroclors, and MCP metals and mercury, were conducted in accordance with the MassDEP Compendium of Analytical Methods (CAM). Analyses of soil samples submitted by TRC for PCB homologs were conducted in accordance with EPA Method 680.

Samples submitted by BETA for metals analyses were analyzed for the Resource Conservation and Recovery Act (RCRA) 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver). BETA also submitted soil samples for analysis of PCB Aroclors, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, herbicides, total petroleum hydrocarbons (TPH), toxicity characteristics leaching procedure (TCLP) metals, flashpoint, reactivity, and dibenzofuran.

A Method 1/Method 2 risk characterization approach was utilized initially to evaluate soil impacts to support remedial planning. The delineation sampling investigations were performed to determine pre-defined excavation boundaries for the lateral and vertical extent necessary to achieve the remedial goal (i.e., EPCs less than or equal to Method 1/Method 2 S-1 soil standards). Method 2 soil standards were developed for chemicals lacking tabulated MCP Method 1 soil standards using methods and assumptions described in 310 CMR 40.0983 and 40.0884 of the MCP. TRC verified the suitability of the soil removal remedial approach originally delineated using Method 1/Method 2 risk characterization protocols using a site-specific Method 3 risk characterization approach as described in the Phase II (TRC, 2011c).

Areas were identified for targeted soil removal or installation/expansion of paving exposure barriers throughout the NBHS Campus. Following soil removal in areas targeted for remediation or prevention of direct contact exposure, including supplemental excavation activities described in the RAM Completion Report (TRC, 2014b), a Method 1/Method 2 risk characterization approach was used to demonstrate that a Condition of No Significant Risk exists for soil at the NBHS Campus for the top 3 feet of soil in unpaved areas, which was then verified using a Method 3 risk characterization approach. A Condition of No Significant Risk has been achieved for the top 3 feet of soils in unpaved areas; however an AUL needs to be placed on the property to control certain site uses and activities and to mitigate/control potential exposure to impacted soils greater than three feet below ground surface in unpaved areas and below paved surfaces where impacted soils are present at shallower depths. The post-remediation risk characterization

and associated AUL documentation will be documented in a separate permanent solution document for the NBHS Campus.

The RAM activities described herein will be will be implemented consistent with the current understanding of shallow soil conditions throughout the NBHS Campus, particularly in the vicinity of A-Block ("Green House") and C-Block of the NBHS building.

3.4.2 Summary of Soil Analytical Results

Soil samples have been previously collected by TRC in the vicinity of the proposed construction area. The analytical results from these samples provide an understanding of the potential subsurface impacts during excavation activities. The analytical results associated with soil samples collected in the vicinity of the Site are presented in Table 1. Select boring logs are included in Appendix A.

Soil samples were collected in the vicinity of the excavation area between 2004 and 2009 for laboratory analysis of SVOCs, PCBs (Aroclors) and/or metals. Soil sampling generally targeted surface soils (i.e., less than 1 foot below grade) and slightly greater depths (i.e., approximately 1 to 3 feet below grade). Although several SVOCs were detected in each of the analyzed soil samples, no SVOCs were detected in excess of the associated MCP Method 1 S-1 soil standards. PCBs were detected in excess of the MCP Method 1 S-1 soil standard of 1 mg/kg in three soil samples (i.e., HD-22 [1-3'] in both 2004 and 2009 and HD-23 [2-3']) at concentrations ranging from 2.42 mg/kg to 5.444 mg/kg. Lead was the only metal detected in excess of the applicable MCP Method 1 S-1 soil standard of 200 mg/kg in two samples (i.e., HD-22 [1-3'] in 2009 and HD-23 [1-3']) at concentrations of 234 mg/kg and 928 mg/kg, respectively. No other metals were detected above applicable MCP soil standards.

3.4.3 Summary of Groundwater Analytical Results

Although no monitoring wells are located within the proposed construction area, several monitoring wells have been installed within the NBHS Campus. One monitoring (i.e., MW-11) is located in close proximity to the proposed excavation area (see Figure 2). Monitoring well MW-11 was sampled in February, April and September 2010. During each sampling event, groundwater samples were collected in accordance with EPA Region 1 low stress (low flow) sampling protocols and submitted for laboratory VOC analysis.

The analytical results associated with monitoring well MW-11 are presented in Table 2. VOCs were not detected in any of the groundwater samples collected from monitoring well MW-11 in excess of laboratory detection limits.

In addition, groundwater is not anticipated to be encountered during excavation activities given the proposed excavation depth of approximately 1-foot below grade. However, as a precaution, proposed groundwater management activities are discussed in the following section.

4.0 OBJECTIVE, PLAN & IMPLEMENTATION SCHEDULE

4.1 Objective

Work to be performed under this RAM includes:

- Site preparation activities (e.g., as needed survey, utility clearance, safety, security and erosion/sedimentation control measures, etc.);
- Limited soil excavation in the vicinity of the "Green House" portion of A-Block and the administrative offices (C-Block) within the west-central portion of the NBHS Campus;
- Temporary stockpiling and stockpile management (as needed). Alternatively the material may be direct loaded and removed from the Site;
- Off-site transportation of impacted material for reuse, recycling and/or disposal;
- Construction of a concrete pad to support installation of an air cooled condenser;
- Site restoration activities (e.g., final grading, reseeding, removal of safety, security and erosion/sedimentation control measures, etc.).

The objective of these RAM activities is to remove a limited volume of shallow soil material to facilitate installation of a concrete pad to support installation of an air cooled condenser.

4.2 Plan

The aforementioned RAM activities are discussed in further detail in the following section. The RAM-related activities are consistent with the requirements described in 310 CMR 40.0442 of the MCP, including a limited scope and complexity commensurate with the current understanding of the disposal site, limited excavation and disposal of soil potentially impacted with oil and/or hazardous materials (OHM) and will not impede future response actions or the pending submittal of a Permanent Solution and associated AUL.

4.2.1 Site Preparation

Prior to any intrusive activities, all customary utility mark-out procedures, including the use of Dig-Safe®, will be employed to ensure that no public/member utilities are located within the vicinity of remedial activities, or if utilities are present, to help guide appropriate contingency actions. Locations of utilities will be clearly marked and maintained on the public right-of-way (consistent with Dig-Safe® practices). Safety, security and erosion/sedimentation control measures (as necessary) will be implemented prior to intrusive activities.

Implementation of all RAM-related activities will be conducted in accordance with a site-specific health and safety plan (HASP). During all excavation and dewatering activities (not anticipated), health and safety monitoring will also be conducted. Security will be maintained to prevent access by unauthorized and non-essential personnel within the work area. During excavation activities, an Exclusion Zone will be established (e.g., caution tape and traffic cones)

around the work area and no unauthorized personnel will be permitted inside the Exclusion Zone.

4.2.2 Soil Excavation/Removal

The anticipated maximum excavation extents are approximately 25-feet by 10-feet, with a maximum depth of approximately 1-foot below grade (see Figure 3). These limits are subject to expansion or reduction based on the final design specifications and/or field observation (e.g., presence of subsurface utilities) during RAM implementation. Given the relative size of the proposed excavation, the use of an excavator is anticipated to facilitate excavation and removal of the soil. Hand tools may also be employed throughout the excavation process.

Following soil excavation activities, a concrete pad will be installed within the excavation footprint to facilitate installation of an air cooled condenser. A limited volume of imported material may be used to backfill portions of the excavations in support of construction and/or to reestablish grassed areas damaged during construction activities. Imported material (i.e., topsoil) will be documented compliant prior to being used onsite (as needed). The backfill material will be compacted with the excavator bucket in less than or equal to one foot lifts, making proper allowances for placement of the concrete pad or topsoil, and re-seeded or finished with the installation of new sod.

The excavated material will either be live-loaded directly into trucks or temporarily stockpiled on-site on polyethylene sheeting (10 mil minimum) adjacent to the excavation. Alternatively, excavated material may be transported to a City-owned property for temporary stockpiling. The material will be stockpiled on polyethylene sheeting (10 mil minimum) pending off-site reuse, recycling and/or disposal.

Existing characterization data will be utilized with supplemental stockpile characterization data to facilitate off-site reuse, recycling and/or disposal of the soil. Excavated material will be managed as described in the *Soil Management Plan* in Appendix B.

All soil material will be transported from the Site under a MassDEP Bill of Lading (BOL), Material Shipping Record (MSR) or Hazardous Waste Manifest, as appropriate. All shipping records associated with the RAM will be maintained and included in a RAM Completion Report. Following completion of RAM activities, a RAM Completion Report will be submitted to MassDEP on behalf of the City.

4.3 Implementation Schedule

The City anticipates implementing the RAM activities during winter 2015 (i.e., January/February 2015 timeframe) following the concurrence of MassDEP. It is anticipated that the remedial activities can be completed in approximately one to two weeks depending on the weather conditions.

Per 310 CMR 40.0446, the City anticipates submittal of a RAM Completion Report within 60 days of the completion of all RAM activities.

5.0 REMEDIATION WASTE MANAGEMENT STATEMENT

This section describes procedures for the on-site management and off-site reuse, recycling, and/or disposal of remediation waste generated during this RAM. Remediation waste management will be conducted in accordance with the applicable sections of the MCP, MassDEP *Interim Remediation Waste Management Policy for Petroleum Contaminated Soils*, WSC-94-400 and MassDEP Policy# COMM-97-001 *Reuse and Disposal of Contaminated Soils and Sediments at Massachusetts Landfills*, and 40 CFR Part 761, where applicable.

The maximum estimated volume of excavated soil that could be potentially transported from the Site as part of this RAM is approximately 10 cubic yards (potentially subject to change based on field observations during excavation activity). The *Soil Management Plan* provided in Appendix B outlines the plan for soil management at the Site.

5.1 On-Site Soil Management

Soil excavation will take place with qualified field oversight personnel. The City will be prepared to implement means to prevent fugitive dust generation (e.g., water sprays) as necessary.

Excavated soils associated with the RAM will be direct loaded for removal from the property and or temporarily stockpiled adjacent to the excavation. Excavated soil may be segregated into the following soil types by the degree of impact and proposed disposal facility[2]:

- Type A – Pre-characterized soils for reuse on-site; excess Type-A soil also suitable for off-site reuse as cover material at a lined or unlined landfill facility. On-site reuse is restricted to the location from which the soils were excavated. Any other placement requires prior approval of the LSP;
- Type B – Suitable for unlined or lined landfill re-use (chemically unsuited for reuse on-site);
- Type C – Suitable for asphalt batch recycling (geotechnically unsuited for reuse on-site and/or chemically unsuited for reuse on-site or off-site);
- Type D – Non-hazardous waste landfill disposal (chemically unsuited for on-site or off-site reuse, and off-site recycling);
- Type E – Soil requiring segregation and off-site treatment prior to disposal as a hazardous waste; and
- Type F – Soil requiring disposal at TSCA chemical waste landfill.

Soils types are further discussed in *Soil Management Plan* provided in Appendix B. Security will be maintained to prevent access by unauthorized and non-essential personnel within the work area. The excavated material will either be live-loaded directly into trucks or temporarily

[2] Only soil Types A, B and C are anticipated to in association with this RAM Plan; however all potential soil types are listed for reference purposes.

stockpile on polyethylene sheeting (10 mil minimum) adjacent the excavation. Alternatively, excavated material may be transported to a City-owned property for temporary stockpiling. The material will be stockpiled on polyethylene sheeting (10 mil minimum) pending off-site reuse, recycling and/or disposal.

5.2 Off-Site Re-use, Recycling, and/or Disposal

Excavated material that will be transported from the Site will be characterized as appropriate for off-site reuse, recycling, and/or disposal at a suitable facility. Several suitable off-site facilities are being considered, but the facility locations have not been finalized and will be coordinated through the City's selected remediation contractor. Segregated soil will be targeted for reuse by the City. Analytical data collected during the previous investigations, as well as supplemental stockpile characterization data, will be used to explore disposal and reuse options. The laboratory data will initially be compared against Massachusetts reuse, recycle, and disposal criteria in accordance to MassDEP Policy# COMM-97-001 and Interim Policy #WSC-94-400.

Use of MassDEP COMM-97-001 and WSC-94-4000 tabulated acceptance criteria values does not preclude the use of out-of-state facilities that offer similar reuse (e.g., landfill daily cover) or recycling (e.g., asphalt batch) opportunities. Such opportunities may be evaluated and/or utilized on a case-by-case basis assuming facility acceptance criteria can be met and the facility is currently permitted within its regulatory jurisdiction for the reuse and/or recycling service provided.

Transportation of all materials from the Site will be performed using a MassDEP BOL, MSR or Hazardous Waste Manifest, as appropriate, and will be performed within 120 days of stockpiling in accordance with 310 CMR 40.0030 of the MCP.

The transport of impacted materials from the Site to the disposal facility will be in accordance with all Department of Transportation (DOT), United States Environmental Protection Agency (EPA), and MassDEP regulations, as appropriate. The hauler(s) will be licensed in all states affected by the transport of Site soil.

Unless otherwise noted above, no remediation waste, remedial wastewater and/or remedial additives will be excavated, collected, stored, treated, discharge, applied, reused or otherwise managed in association with this RAM Plan without appropriate coordination with and approval of the MassDEP (as appropriate).

5.3 Groundwater Management

The depth of soil excavation for the proposed construction activities is shallow (i.e., approximate maximum depth of 1.5 feet below grade). With the groundwater table in this area generally at a depth of approximately less than 2 feet below grade, the potential exists for groundwater to be encountered how dewatering is not anticipated to be necessary.

6.0 ENVIRONMENTAL MONITORING PLAN

City personnel will be on-site during the excavation and off-site transport for reuse, recycling and/or disposal of impacted material and will conduct environmental monitoring activities as described herein.

This section summarizes the protective measures that will be employed to preserve environmental conditions at the Site.

6.1 Dust Suppression

During all removal activities, appropriate controls will be employed to monitor and control impacted materials. Such controls may include air monitoring and dust suppression for fugitive dust. Water sprays, as needed, will be applied as a heavy mist, rather than a water stream, to ensure the water is aerosolized to maximize dust capture/interception and thus suppression. Increased water sprays (e.g., additional hoses and/or water volume) will be implemented based on visual observations of effectiveness. In the unlikely event that wind conditions are present that render dust suppression ineffective based visual observations, those activities will be suspended until favorable wind conditions resume/return or dust suppression suitable for the conditions can be reliably implemented.

6.2 Protection of Land Resources

The activities covered under this environmental monitoring plan specifically include the area of excavation as described herein. Protection of areas will be performed during mobilization, excavating, staging and demobilization. Disturbed areas will be restored to their existing condition following completion of remedial activities.

All trucks and heavy equipment will be decontaminated (i.e., brushing-off of soil, etc.) prior to leaving the Site. All vehicles/equipment leaving the Site will be inspected to ensure any excess soil or debris is removed from the vehicle and its tires.

6.2.1 Erosion and Sedimentation Control Procedures

Erosion and sedimentation controls may be installed depending on field observations. As the Site generally exhibits a flat topography the use of sedimentation and erosion control measures is not anticipated to be required. If required based on field observations and Site conditions, sedimentation and erosion controls will be constructed based on a supplement to this RAM. Work will not be performed during periods of heavy rain.

6.3 Decontamination

Vehicles, equipment, and reusable personal protective equipment (PPE) coming into contact with impacted material will be properly decontaminated prior to removal from the Site. Soil and materials removed during decontamination will be properly disposed of off-site.

6.4 Field Screening Associated with Soil Removal

Should visual or olfactory observations indicate the potential presence of unanticipated soil impacts and/or the potential need for upgrades in PPE to appropriately protect work safety, field screening of soil will be implemented to monitor soil conditions, excavation progress and work safety.

6.4.1 Jar-Headspace Field Screening of Soils

VOCs are not a COPC for material targeted by this RAM Plan. Should it be deemed necessary based on site-specific conditions, soil samples will be screened via the MassDEP jar-headspace method for the potential presence of VOCs based on professional judgment and at the discretion of the LSP.

6.4.2 Instrumented VOC Air Monitoring

Should visual or olfactory observations indicate the potential presence of unanticipated soil impacts and/or the potential need for upgrades in PPE to appropriately protect work safety, VOC air monitoring will be performed using a PID to monitor for the presence of VOCs within the work area breathing zone. Based on previously existing Site data, significant VOC emissions are not expected during construction.

Instrument readings from breathing zones within the work zone will be used to help evaluate the need for instituting additional safety measures or upgrading PPE levels.

6.4.3 Air Monitoring for Dust

As previously noted, during activities that involve the movement or other disturbance of potentially impacted materials, dust suppression consisting of water sprays may be implemented. Dust suppression will be implemented based on visual observations during construction activities. In the unlikely event that wind conditions are present that render dust suppression ineffective based on visual observations, those activities will be suspended until favorable wind conditions resume/return or dust suppression suitable for the conditions can be reliably implemented.

7.0 FEDERAL, STATE & LOCAL PERMITS

7.1 Federal Permit Requirements

There are no known Federal environmental permit requirements.

7.2 State Permit Requirements

There are no known State environmental permit requirements.

7.3 Local Permit Requirements

There are no known Local environmental permit requirements.

7.4 Miscellaneous Fees, Notices, and Transportation Documentation

As the disposal site tracked by RTN 4-15685 has been given a Tier II Classification consistent with the criteria provided in 310 CMR 40.0520(2) of the revised MCP, no fee is required in association with submittal of this RAM Plan pursuant to 310 CMR 40.0444(2).

Massachusetts Dig-Safe must be notified at least 72 hours prior to commencing the excavation activities described in this RAM Plan. The City or City's contractor will be responsible for construction/refurbishment related Dig-Safe notifications.

All material that is transported from the Site must be transported under a MassDEP BOL that contains the signature and seal of the LSP of record for the Site, or under a MSR or hazardous waste manifest.

8.0 SEAL & SIGNATURE OF LICENSED SITE PROFESSIONAL

The Licensed Site Professional overseeing this RAM is:

David M. Sullivan, LSP
LSP License Number: 1488
TRC Environmental Corporation
Wannalancit Mills
650 Suffolk Street
Lowell, Massachusetts 01854
(978) 656-3565

This RAM Plan has been prepared in accordance with 310 CMR 40.0444 as set forth in the MCP.

David M. Sullivan, LSP **Date**
TRC Environmental Corporation
Licensed Site Professional No. 1488

Stamp

9.0 CERTIFICATION OF FINANCIAL RESOURCES

Although significantly less than 1,500 cubic yards of remediation waste will be generated and/or managed in association with this RAM Plan, consistent with 310 CMR 40.0442(5) of the MCP the City attests to the availability of sufficient financial resources for the transportation and recycling or disposal of excess and unsuitable materials.

10.0 OTHER RELEVANT INFORMATION

10.1 Public Involvement

As required by 310 CMR 40.1403(3)(d), the Mayor and the Board of Health for the City of New Bedford were notified in writing of the proposed RAM activities. Copies of the notification letters that were sent to the Mayor and Board of Health are provided in Appendix C.

11.0 REFERENCES

Burmeister, 1958. *Suggested Methods of Tests for Identification of Soils.* In: Procedures for Testing Soils. American Society for Testing and Materials, Philadelphia, PA, 1958.

MassGIS, 2008 Massachusetts Geographic Information System (MassGIS), On-line MassDEP Priority Resource Map. Accessed July 28, 2008. http://maps.massgis.state.ma.us/21e/viewer.htm

MassDEP, 1994 *Interim Remediation Waste Management Policy for Petroleum Contaminated Soils*, WSC-94-400,

MassDEP, 1997 COMM#97-001 *Reuse and Disposal of Contaminated Soils and Sediments at Massachusetts Landfills*.

MassDEP, 2014 *Massachusetts Contingency Plan; 310 CMR 40.0000.* April 25, 2014.

TRC, 2011a *Release Abatement Measure Plan, Soil Excavation and Removal at New Bedford High School, Parker Street Waste Site, New Bedford, Massachusetts.* Prepared for the City of New Bedford. Prepared by TRC, Lowell, Massachusetts. April 2011

TRC, 2011b *Release Abatement Measure Plan Modification, Soil Excavation and Removal at New Bedford High School, Parker Street Waste Site, New Bedford, Massachusetts.* Prepared for the City of New Bedford. Prepared by TRC, Lowell, Massachusetts. July 2011

TRC, 2011c *Phase II Comprehensive Site Assessment, New Bedford High School Campus at the Parker Street Waste Site, New Bedford, Massachusetts.* Prepared for the City of New Bedford. Prepared by TRC, Lowell, Massachusetts. April 2011.

TRC, 2011d *Release Abatement Measure Status Report, Soil Excavation and Removal at New Bedford High School, Parker Street Waste Site, New Bedford, Massachusetts*. Prepared for the City of New Bedford. Prepared by TRC, Lowell, Massachusetts. August 2011.

TRC, 2012a *Release Abatement Measure Status Report, Soil Excavation and Removal at New Bedford High School, Parker Street Waste Site, New Bedford, Massachusetts*. Prepared for the City of New Bedford. Prepared by TRC, Lowell, Massachusetts. February 2012.

TRC, 2012b *Release Abatement Measure Status Report, Soil Excavation and Removal at New Bedford High School, Parker Street Waste Site, New Bedford, Massachusetts*. Prepared for the City of New Bedford. Prepared by TRC, Lowell, Massachusetts. August 2012.

TRC, 2013a — *Release Abatement Measure Status Report, Soil Excavation and Removal at New Bedford High School, Parker Street Waste Site, New Bedford, Massachusetts*. Prepared for the City of New Bedford. Prepared by TRC, Lowell, Massachusetts. February 2013.

TRC, 2013b — *Release Abatement Measure Status Report, Soil Excavation and Removal at New Bedford High School, Parker Street Waste Site, New Bedford, Massachusetts*. Prepared for the City of New Bedford. Prepared by TRC, Lowell, Massachusetts. September 2013.

TRC, 2014a — *Release Abatement Measure Status Report, Soil Excavation and Removal at New Bedford High School, Parker Street Waste Site, New Bedford, Massachusetts*. Prepared for the City of New Bedford. Prepared by TRC, Lowell, Massachusetts. February 2014.

TRC, 2014b — *Release Abatement Measure Completion Report, Soil Excavation and Removal at New Bedford High School, Parker Street Waste Site, New Bedford, Massachusetts*. Prepared for the City of New Bedford. Prepared by TRC, Lowell, Massachusetts. July 2014.

Zen, 1983. — Zen, E. (editor), Goldsmith, R., Ratcliffe, N.M., Robinson, P., Stanley, R. S., compilers, 1983, Bedrock Geologic Map of Massachusetts. U.S. Geological Survey.

TABLES

Table 1
Summary of Detected Analytical Results for Soil Samples Proximate to Proposed Excavation Area
New Bedford High School
New Bedford, Massachusetts

Analysis	Analyte						HD22			HD23			HS-12	NBHS-SS-10	SS-50
		Sample Location:					HD22			HD23			HS-12	NBHS-SS-10	SS-50
		Sample Depth (ft.):					1-3	0-1	1-3	2-3	0-1	1-3	0-0.5	0-0.5	0-0.5
		Sample Date:					12/29/2004	4/9/2009	4/9/2009	12/29/2004	3/31/2009	3/31/2009	9/9/2004	8/6/2008	12/2/2008
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3	RC S-1^									
SVOCs															
(mg/kg)	Acenaphthene	1,000	1,000	3,000	3,000	4	NA	0.199 U	0.191 U	NA	0.190 U	**0.217**	NA	NA	**0.257**
	Anthracene	1,000	1,000	3,000	3,000	1,000	NA	**0.241**	**0.423**	NA	0.190 U	**0.626**	NA	NA	**0.900**
	Benzo(a)anthracene	7	7	40	40	7	NA	**0.566**	**1.35**	NA	0.190 U	**1.24**	NA	NA	**2.03**
	Benzo(a)pyrene	2	2	7	7	2	NA	**0.493**	**1.22**	NA	0.190 U	**1.01**	NA	NA	**1.65**
	Benzo(b)fluoranthene	7	7	40	40	7	NA	**0.658**	**1.66**	NA	0.190 U	**1.03**	NA	NA	**2.05**
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	1,000	NA	**0.218**	**0.577**	NA	0.190 U	**0.362**	NA	NA	**0.905**
	Benzo(k)fluoranthene	70	70	400	400	70	NA	**0.239**	**0.622**	NA	0.190 U	**0.352**	NA	NA	**0.872**
	Chrysene	70	70	400	400	70	NA	**0.551**	**1.35**	NA	0.190 U	**1.30**	NA	NA	**1.80**
	Dibenz(a,h)anthracene	0.7	0.7	4	4	1	NA	0.199 U	0.191 U	NA	0.190 U	0.206 U	NA	NA	**0.221**
	Fluoranthene	1,000	1,000	3,000	3,000	1,000	NA	**0.992**	**2.32**	NA	**0.193**	**1.45**	NA	NA	**4.32**
	Fluorene	1,000	1,000	3,000	3,000	1,000	NA	0.199 U	0.191 U	NA	0.190 U	**0.291**	NA	NA	**0.380**
	Indeno(1,2,3-cd)pyrene	7	7	40	40	7	NA	**0.293**	**0.694**	NA	0.190 U	**0.430**	NA	NA	**0.973**
	2-Methylnaphthalene	80	300	80	500	0.7	NA	0.199 U	0.191 U	NA	0.190 U	0.206 U	NA	NA	0.210 U
	Naphthalene	20	500	20	1,000	4	NA	0.199 U	0.191 U	NA	0.190 U	0.206 U	NA	NA	0.210 U
	Phenanthrene	500	500	1,000	1,000	10	NA	**0.980**	**1.80**	NA	**0.204**	**3.28**	NA	NA	**3.06**
	Pyrene	1,000	1,000	3,000	3,000	1,000	NA	**0.849**	**1.71**	NA	**0.264**	**2.22**	NA	NA	**4.79**
PCB Aroclors															
(mg/kg)	Aroclor 1254	1	1	4	4	1	**4.79**	**0.132 J**	**2.42 J**	**3.74**	NA	NA	**0.438**	**0.192 J**	**0.939 J**
	Aroclor 1260	1	1	4	4	1	0.061 U	0.0546 U	0.168 U	0.054 U	NA	NA	0.11 U	0.0544 U	0.0587 U
	Aroclor 1262	1	1	4	4	1	**0.654**	NA	NA	**0.418**	NA	NA	0.11 U	NA	NA
	Total PCBs	1	1	4	4	1	**5.444**	**0.132 J**	**2.42 J**	**4.158**	NA	NA	**0.438**	**0.192 J**	**0.939 J**
Metals															
(mg/kg)	Arsenic	20	20	20	20	20	NA	**3.49**	**5.30**	NA	**3.08**	**17.4**	NA	NA	**4.96**
	Barium	1,000	1,000	3,000	3,000	1,000	NA	**58.8**	**218**	NA	**36.5**	**385**	NA	NA	**69.9**
	Beryllium	90	90	200	200	90	NA	NA	NA	NA	NA	NA	NA	NA	0.32 U
	Cadmium	70	70	100	100	70	NA	**0.38**	**1.26**	NA	0.29 U	**1.35**	NA	NA	**0.42**
	Chromium	100	100	200	200	100	NA	**10.9**	**22.9**	NA	**7.09**	**28.8**	NA	NA	**11.7**
	Lead	200	200	600	600	200	NA	**74.6**	**234**	NA	**31.7**	**928**	NA	NA	**73.0**
	Mercury	20	20	30	30	20	NA	NA	NA	NA	NA	NA	NA	NA	**0.102**
	Nickel	600	600	1,000	1,000	600	NA	NA	NA	NA	NA	NA	NA	NA	**5.09**
	Vanadium	400	400	700	700	400	NA	NA	NA	NA	NA	NA	NA	NA	**18.3**
	Zinc	1,000	1,000	3,000	3,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	**60.2**

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
mV - milliVolt.
s.u. - Standard unit.
J - Estimated value; below quantitation limit.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
U - Compound was not detected at specified quantitation limit.
Values in **Bold** indicate the compound was detected.
Values shown in Bold and shaded type exceed one or more of the listed Method 1 standards.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
RC - Reportable Concentration.
TCLP - Toxicity Characteristic Leaching Procedure.
2004 and 2005 Data are based on the "Summary of Analytical Data, New Bedford High School" dated June 9, 2006, BETA Group, Inc.
(a) - The sample was re-collected on 3/31/2009 and analyzed for dibenzofuran.
* - The sample exhibits altered PCB pattern; best possible Aroclor match reported.
** - TRC developed standards.
^ - For reference purposes only.

Table 2
Summary of Analytical Results for Groundwater Samples (MW-11)
New Bedford High School
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:		MW-11		
		Screened Interval:		2 to 12		
		Groundwater Classification		GW-2/GW-3		
		Filter Size (micron)^:		N/A	N/A	N/A
		Sample Date:		2/19/2010	4/7/2010	9/13/2010
		GW-2	GW-3			
VOCs						
(ug/L)	Acetone	50,000	50,000	5.0 U	5.0 U	5.0 U
	tert-Amyl Methyl Ether (TAME)	NS	NS	2.0 U	2.0 U	2.0 U
	Benzene	1,000	10,000	1.0 U	1.0 U	1.0 U
	Bromobenzene	NS	NS	2.0 U	2.0 U	2.0 U
	Bromochloromethane	NS	NS	2.0 U	2.0 U	2.0 U
	Bromodichloromethane	6	50,000	1.0 U	1.0 U	1.0 U
	Bromoform	700	50,000	2.0 U	2.0 U	2.0 U
	Bromomethane	7	800	5.0 U	5.0 U	2.0 U
	2-Butanone (MEK)	50,000	50,000	5.0 U	5.0 U	5.0 U
	n-Butylbenzene	4,000(1)	50,000(1)	2.0 U	2.0 U	2.0 U
	sec-Butylbenzene	4,000(1)	50,000(1)	2.0 U	2.0 U	2.0 U
	tert-Butylbenzene	4,000(1)	50,000(1)	2.0 U	2.0 U	2.0 U
	tert-Butyl Ethyl Ether (TBEE)	NS	NS	2.0 U	2.0 U	2.0 U
	Carbon Disulfide	NS	NS	2.0 U	2.0 U	2.0 U
	Carbon Tetrachloride	2	5,000	1.0 U	1.0 U	1.0 U
	Chlorobenzene	200	1,000	1.0 U	1.0 U	1.0 U
	Chlorodibromomethane	20	50,000	1.0 U	1.0 U	1.0 U
	Chloroethane	NS	NS	2.0 U	2.0 U	2.0 U
	Chloroform	50	20,000	1.0 U	1.0 U	1.0 U
	Chloromethane	NS	NS	2.0 U	2.0 U	2.0 U
	2-Chlorotoluene	NS	NS	2.0 U	2.0 U	2.0 U
	4-Chlorotoluene	NS	NS	2.0 U	2.0 U	2.0 U
	1,2-Dibromo-3-chloropropane (DBCP)	NS	NS	5.0 U	5.0 U	2.0 U
	1,2-Dibromoethane (EDB)	2	50,000	2.0 U	2.0 U	2.0 U
	Dibromomethane	NS	NS	2.0 U	2.0 U	2.0 U
	1,2-Dichlorobenzene	8,000	2,000	1.0 U	1.0 U	1.0 U
	1,3-Dichlorobenzene	6,000	50,000	1.0 U	1.0 U	1.0 U
	1,4-Dichlorobenzene	60	8,000	1.0 U	1.0 U	1.0 U
	Dichlorodifluoromethane (Freon 12)	NS	NS	2.0 U	2.0 U	2.0 U
	1,1-Dichloroethane	2,000	20,000	1.0 U	1.0 U	1.0 U
	1,2-Dichloroethane	5	20,000	1.0 U	1.0 U	1.0 U
	1,1-Dichloroethylene	80	30,000	1.0 U	1.0 U	1.0 U
	cis-1,2-Dichloroethylene	20	50,000	1.0 U	1.0 U	1.0 U
	trans-1,2-Dichloroethylene	80	50,000	1.0 U	1.0 U	1.0 U
	1,2-Dichloropropane	3	50,000	1.0 U	1.0 U	1.0 U
	1,3-Dichloropropane	NS	NS	2.0 U	2.0 U	2.0 U
	2,2-Dichloropropane	NS	NS	2.0 U	2.0 U	2.0 U
	1,1-Dichloropropene	NS	NS	2.0 U	2.0 U	2.0 U
	cis-1,3-Dichloropropene	10(2)	200(2)	0.50 U	0.50 U	0.50 U
	trans-1,3-Dichloropropene	10(2)	200(2)	0.50 U	0.50 U	0.50 U
	Diethyl Ether	NS	NS	2.0 U	2.0 U	2.0 U
	Diisopropyl Ether (DIPE)	NS	NS	2.0 U	2.0 U	2.0 U
	1,4-Dioxane	6,000	50,000	250 U	250 U	250 U
	Ethylbenzene	20,000	5,000	1.0 U	1.0 U	1.0 U
	Hexachlorobutadiene	50	3,000	0.60 U	0.60 U	0.60 U
	2-Hexanone (MBK)	NS	NS	5.0 U	5.0 U	5.0 U
	Isopropylbenzene (Cumene)	4,000(1)	50,000(1)	2.0 U	2.0 U	2.0 U
	p-Isopropyltoluene (p-Cymene)	4,000(1)	50,000(1)	2.0 U	2.0 U	2.0 U
	Methyl tert-Butyl Ether (MTBE)	50,000	50,000	2.0 U	2.0 U	2.0 U
	Methylene Chloride	2,000	50,000	5.0 U	5.0 U	2.0 U
	4-Methyl-2-pentanone (MIBK)	50,000	50,000	5.0 U	5.0 U	5.0 U
	Naphthalene	700	20,000	5.0 U	5.0 U	2.0 U
	n-Propylbenzene	4,000(1)	50,000(1)	2.0 U	2.0 U	2.0 U
	Styrene	100	6,000	1.0 U	1.0 U	1.0 U
	1,1,1,2-Tetrachloroethane	10	50,000	1.0 U	1.0 U	1.0 U
	1,1,2,2-Tetrachloroethane	9	50,000	1.0 U	1.0 U	1.0 U
	Tetrachloroethylene	50	30,000	1.0 U	1.0 U	1.0 U
	Tetrahydrofuran	NS	NS	10 U	10 U	10 U
	Toluene	50,000	40,000	1.0 U	1.0 U	1.0 U

Table 2
Summary of Analytical Results for Groundwater Samples (MW-11)
New Bedford High School
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:		MW-11		
		Screened Interval:		2 to 12		
		Groundwater Classification		GW-2/GW-3		
		Filter Size (micron)^:		N/A	N/A	N/A
		Sample Date:		2/19/2010	4/7/2010	9/13/2010
		GW-2	GW-3			
	1,2,3-Trichlorobenzene	NS	NS	2.0 U	2.0 U	2.0 U
	1,2,4-Trichlorobenzene	200	50,000	2.0 U	2.0 U	2.0 U
	1,1,1-Trichloroethane	4,000	20,000	1.0 U	1.0 U	1.0 U
	1,1,2-Trichloroethane	900	50,000	1.0 U	1.0 U	1.0 U
	Trichloroethylene	5	5,000	1.0 U	1.0 U	1.0 U
	Trichlorofluoromethane (Freon 11)	NS	NS	2.0 U	2.0 U	2.0 U
	1,2,3-Trichloropropane	NS	NS	2.0 U	2.0 U	2.0 U
	1,2,4-Trimethylbenzene	4,000(1)	50,000(1)	2.0 U	2.0 U	2.0 U
	1,3,5-Trimethylbenzene	4,000(1)	50,000(1)	2.0 U	2.0 U	2.0 U
	Vinyl Chloride	2	50,000	1.0 U	1.0 U	1.0 U
	m+p Xylene	3,000	50,000	2.0 U	2.0 U	2.0 U
	o-Xylene	3,000	50,000	1.0 U	1.0 U	1.0 U

Notes:

ug/L - micrograms per liter.

NA - Sample not analyzed for the listed analyte.

N/A - Not applicable.

NS - No MassDEP standards exist for this compound.

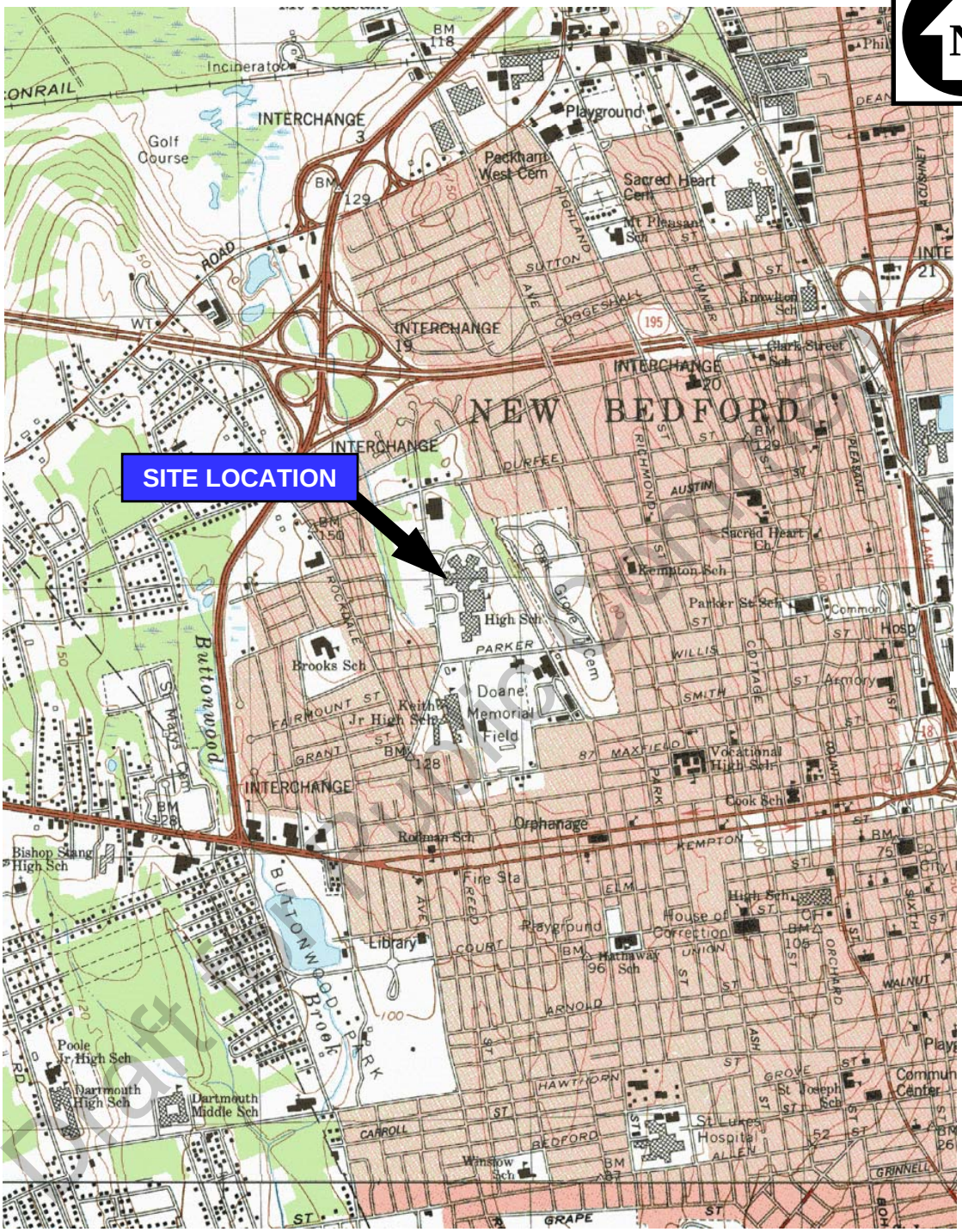
U - Compound was not detected at specified quantitation limit.

Values in **Bold** indicate the compound was detected.

Values shown in Bold and shaded type exceed one or more of the listed MassDEP Method 1 standards.

VOCs - Volatile Organic Compounds.

FIGURES



BASE MAP IS A PORTION OF THE FOLLOWING 7.5' X 15' USGS TOPOGRAPHIC QUADRANGLES: NEW BEDFORD NORTH, MA, 1979; NEW BEDFORD SOUTH, MA 1977

0 1000 2000 3000

scale in feet

QUADRANGLE LOCATION

T:\E_CAD\115058\TOPO NBHS.ppt

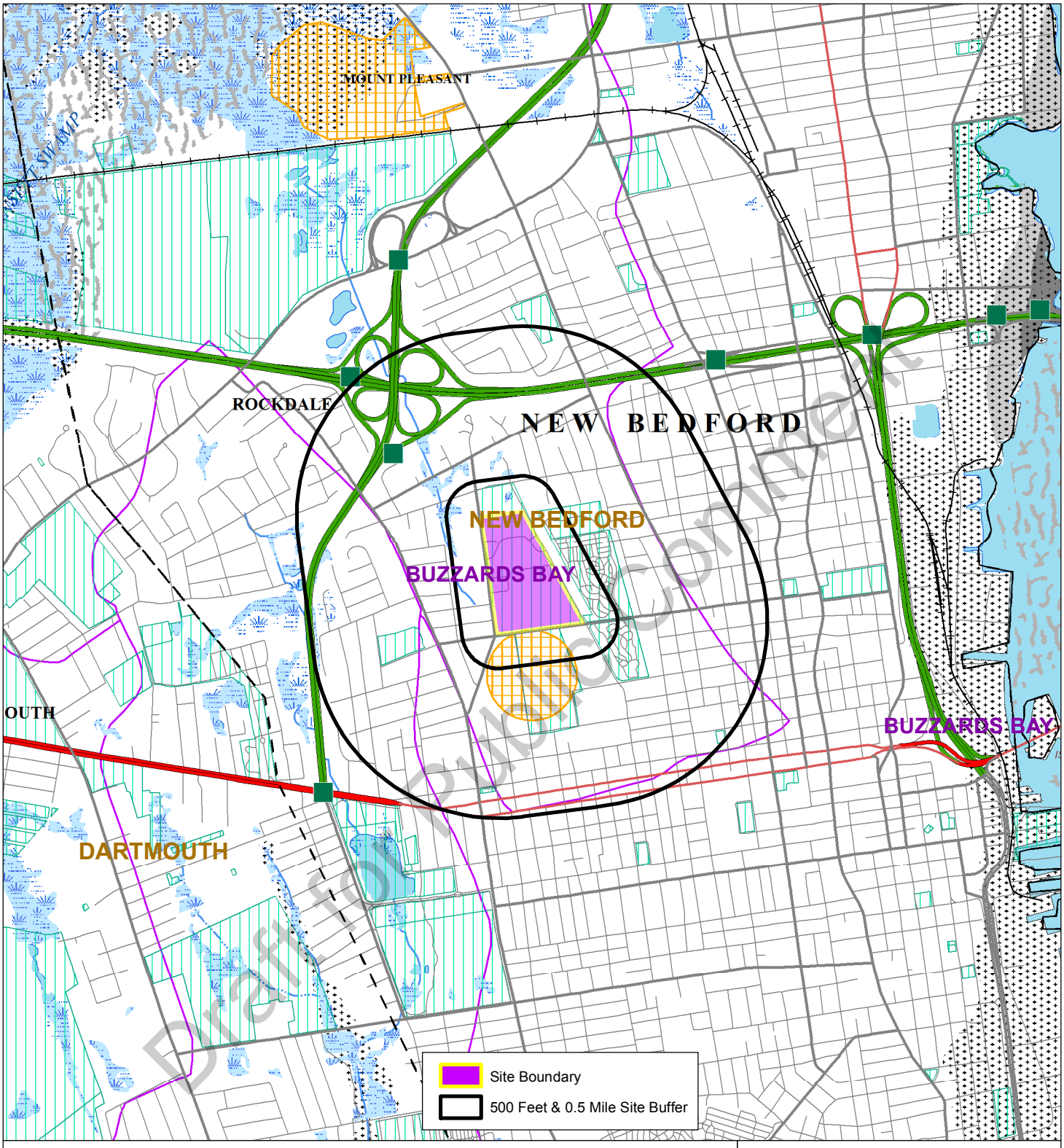
NEW BEDFORD HIGH SCHOOL
NEW BEDFORD, MASSACHUSETTS

SITE LOCATION MAP

TRC
Wannalancit Mills
650 Suffolk Street
Lowell, MA 01854
978-970-5600

FIGURE 1

Drawn: HWB	SCALE: AS SHOWN
Checked: DS	Date: OCT 2008



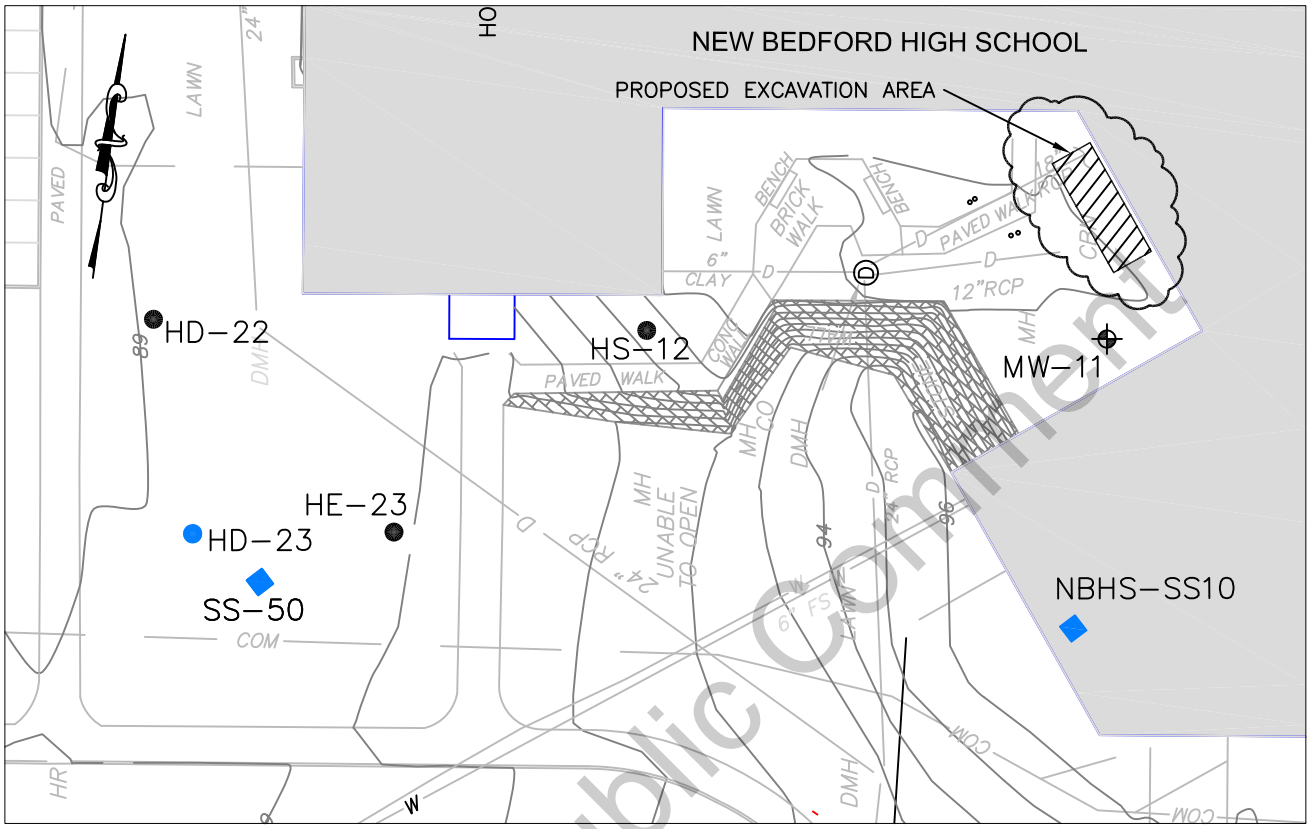
TRC
Wannalancit Mills
650 Suffolk Street
Lowell, MA 01854
978-970-5600

FIGURE 2

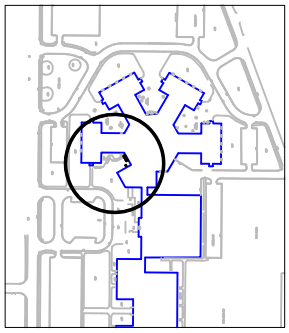
MASSDEP PRIORITY RESOURCES MAP
NEW BEDFORD HIGH SCHOOL
NEW BEDFORD, MA

0 1,000 2,000
Feet

SEPT 2014



APPROXIMATE GRAPHIC SCALE
0' 10' 20' 40'



SITE LOCATION

LEGEND:

- EXCAVATION AREA
- BETA GROUP, INC. SOIL BORING LOCATION
- TRC SOIL BORING LOCATION
- TRC SURFACE SOIL SAMPLE LOCATION
- MONITORING WELL LOCATION

PROJECT:
NEW BEDFORD HIGH SCHOOL
NEW BEDFORD, MASSACHUSETTS

TITLE:
PROPOSED EXCAVATION AREA

DRAWN BY:	MAN	PROJ NO.:	242121
CHECKED BY:	JS		
APPROVED BY:	JS	**FIGURE 3**	
DATE:	APRIL 2016		

TRC
650 Suffolk Street
Suite 200
Lowell, MA 01854
Phone: 978.970.5600

FILE NO.: school_pad.dwg

APPENDIX A

SOIL BORING LOGS

Wannalancit Mills
650 Suffolk Street
Lowell MA
Telephone: 978-970-5600
Fax: 978-453-1995

BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER City of New Bedford (NBHS)/115058
BORING/WELL NUMBER HD-22
TRC GEOLOGIST K. Kitchin
DRILLING CONTRACTOR/FOREMAN New England Geotech/Bill Meadows
DATE DRILLED 4/9/09
LOCATION NBHS - Southeast of western faculty parking lot
SAMPLING METHOD 48" Macrocore
DRILLING METHOD Direct Push/5400 Truck Rig
NOTES Samples analyzed for PCBs, PAHs, and Metals (Pb, Cd, Cr, As, Ba)

SCREEN TYPE/SLOT NA
FILTER PACK TYPE NA
SEAL TYPE NA
DEPTH TO WATER (Approximate Feet) NA
TOTAL DEPTH (Feet) 4
GROUND ELEVATION (Feet) 89.03
REFERENCE ELEVATION (Feet)

DEPTH (ft. BGL)	BLOW COUNTS	PEN/REC (INCHES)	CORE #	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	Field Testing (ppm)	SAMPLE ID/ TIME	WELL DIAGRAM
	NA	48/36	S-1		8" Dark brown organic SILT, trace fine gravel, trace glass, grass and roots.		HD-22(0-1) 1515	
1					16" Dark brown to brown fine to medium SAND, some fine gravel, trace glass and silt.			
2					6" Tan fine to medium SAND, some silt.	0.0	HD-22(1-3) 1520	No Monitoring Well Installed
3					6" FILL (glass, ash, cinders, brick).			
4					End of Boring - Terminated at 4 feet			

Wannalancit Mills
650 Suffolk Street
Lowell MA
Telephone: 978-970-5600
Fax: 978-453-1995

BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER City of New Bedford (NBHS)/115058
BORING/WELL NUMBER HD-23
TRC GEOLOGIST J. Saunders
DRILLING CONTRACTOR/FOREMAN New England Geotech/Bill Meadows
DATE DRILLED 3/31/09
LOCATION NBHS - Southwest of House #1
SAMPLING METHOD 48" Macrocore
DRILLING METHOD Direct Push/5400 Truck Rig
NOTES Samples analyzed for PAHs and Metals (Pb, Cd, Cr, As, Ba)

SCREEN TYPE/SLOT NA
FILTER PACK TYPE NA
SEAL TYPE NA
DEPTH TO WATER (Approximate Feet) NA
TOTAL DEPTH (Feet) 4
GROUND ELEVATION (Feet) 89.10
REFERENCE ELEVATION (Feet)

DEPTH (ft. BGL)	BLOW COUNTS	PEN/REC (INCHES)	CORE #	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	Field Testing (ppm)	SAMPLE ID/ TIME	WELL DIAGRAM
0	NA	48/36	S-1		18" Dark brown organic TOPSOIL (silt and fine sand), trace roots and fine gravel, slightly moist, no odor, no staining.		HD-23(0-1) 1520	
1					2" Pulverized GRAVEL.			
2					16" FILL (ash, coal, trace glass and brick), slightly moist, tan fine sand in cutting shoe, no odor, no staining.	0.0	HD-23(1-3) 1525	No Monitoring Well Installed
3								
4					End of Boring - Terminated at 4 feet			

Wannalancit Mills
650 Suffolk Street
Lowell MA
Telephone: 978-970-5600
Fax: 978-453-1995

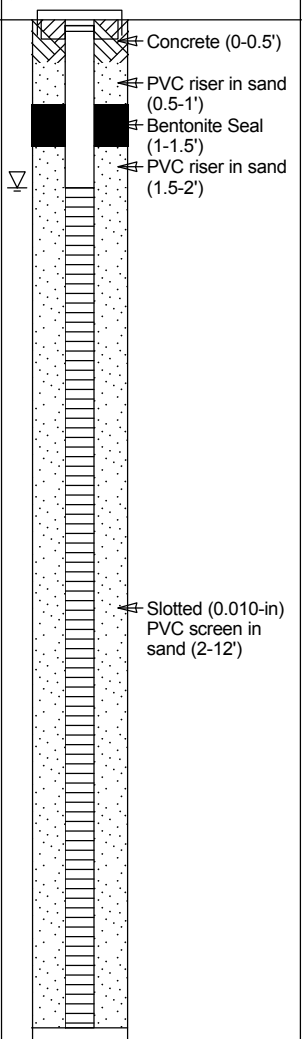
BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER City of New Bedford/115058
BORING/WELL NUMBER MW-11
TRC GEOLOGIST K. Kitchin
DRILLING CONTRACTOR/FOREMAN New England Geotech/Bill Meadows
DATE DRILLED 2/15/10
LOCATION NBHS - Adjacent to Lift Station
SAMPLING METHOD 60" Macrocore
DRILLING METHOD Direct Push/6620DT Geoprobe
NOTES No Soil samples collected.

SCREEN TYPE/SLOT 2-inch Schedule 40 Slotted (0.010-in) PVC
FILTER PACK TYPE #2 Sand
SEAL TYPE Bentonite
DEPTH TO WATER (Approximate Feet) 2
TOTAL DEPTH (Feet) 12
GROUND ELEVATION (Feet) 83.97
REFERENCE ELEVATION (Feet) 83.86

DEPTH (ft. BGL)	BLOW COUNTS	PEN/REC (INCHES)	CORE #	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	Field Testing (ppm)	SAMPLE ID/ TIME
0	NA	60/40	MC-1		0-10" Dark brown organic SILT (TOPSOIL), trace roots and fine gravel, moist, no odor, no staining.		NA
1					10-40" Brown to grey fine to coarse SAND, some fine to coarse gravel, trace silt, wet, no odor, no staining.	0.0	
2							
3							
4							
5	NA	60/60	MC-2		0-15" Brown to grey fine to coarse SAND, some fine to coarse gravel, trace silt, wet, no odor, no staining.		NA
6					15-60" Grey fine SAND, dense, wet, no odor, no staining.		
7						0.0	
8							
9							
10	NA	NA	NA		End of Boring - Terminated at 10 feet Advance 3-inch casing to 12 feet to install monitoring well.		NA
11						NA	
12							

WELL DIAGRAM



APPENDIX B

SOIL MANAGEMENT PLAN

SOIL MANAGEMENT PLAN

SOIL REMOVAL IN SUPPORT OF CONCRETE PAD CONSTRUCTION

New Bedford High School
230 Hathaway Boulevard
New Bedford, Massachusetts

Release Tracking Number 4-15685

Prepared for:

New Bedford Public Schools
455 County Street
New Bedford, Massachusetts 02740

Department of Environmental Stewardship
City of New Bedford
133 William Street
New Bedford, Massachusetts 02740

Prepared by:

TRC
Wannalancit Mills
650 Suffolk Street
Lowell, Massachusetts 01854
(978) 970-5600

April 2016

TABLE OF CONTENTS

1.0 INTRODUCTION

TRC Environmental Corporation (TRC) prepared a Release Abatement Measure (RAM) Plan per the Massachusetts Contingency Plan (MCP; 310 CMR 40.000) for submittal to the Massachusetts Department of Environmental Protection (MassDEP) on behalf of the City of New Bedford's (City's) Department of Environmental Stewardship and New Bedford Public Schools for limited shallow soil removal activities in support of concrete equipment pad construction at the New Bedford High School (NBHS) Campus located at 230 Hathaway Boulevard in New Bedford, Massachusetts (the "Site"). The NBHS Campus is part of the disposal site being managed under MassDEP Release Tracking Number (RTN) 4-15685.

The proposed RAM activities include the following:

- Site preparation activities (e.g., as needed survey, utility clearance, safety, security and erosion/sedimentation control measures, etc.);
- Limited soil excavation in the vicinity of the "Green House" portion of A-Block and the administrative offices (C-Block) within the west-central portion of the NBHS Campus;
- Temporary stockpiling and stockpile management (as needed). Alternatively the material may be direct loaded and removed from the Site;
- Off-site transportation of impacted material for reuse, recycling and/or disposal;
- Construction of a concrete pad to support installation of an air cooled condenser;
- Site restoration activities (e.g., final grading, reseeding, removal of safety, security and erosion/sedimentation control measures, etc.).

This Soil Management Plan (SMP) is intended to provide the City and/or Contractor with information regarding the requisite soil management requirements pertaining to the RAM Plan. These procedures are also designed to ensure that material that is encountered is managed in a manner that is protective of human health, safety, public welfare and the environment, as required by the MCP. Due to the depth of the excavations and proximity to site groundwater it is not anticipated that ground water management will be required. A Commonwealth of Massachusetts Licensed Site Professional (LSP) has been retained by the City to oversee the soil management activities during Site remediation activities to ensure compliance with the applicable provisions of the MCP and related MassDEP policies and guidance.

1.1 Contact Information

The owners (the "Owners") of the project are:

Al Oliveira
Director of Facilities Operations
New Bedford Public Schools
455 County Street
New Bedford, MA 02740
Phone: 508-997-4511

Michele S.W. Paul
Director
Department of Environmental Stewardship
133 William Street, Room 304
New Bedford, MA 02740
Phone: 508-979-1487

David Sullivan will serve as the Licensed Site Professional (LSP) and oversee the RAM for the City.

David Sullivan
TRC Environmental Corporation
Licensed Site Professional No. 1488
650 Suffolk Street
Lowell, MA 01854
Phone: 978-656-3565

1.2 Roles and Responsibilities

The City and its Contractor will furnish all labor, equipment and materials required to complete the work including soil excavation, stockpiling and stockpile management, dust control (as needed) and offsite transportation of soil for reuse, recycling and/or disposal. The City and/or its Contractor will also be responsible for obtaining all necessary Federal, state and local permits required for this work (e.g., Dig-Safe® and other permits that may be required by the City).

Approval to complete the RAM will be presumed upon MassDEP's receipt of the RAM Plan and accompanying information pursuant to 310 CMR 40.0443.

The LSP will periodically inspect the construction activities to ensure consistency with the RAM Plan, this SMP document and applicable MCP and MassDEP policies. Specifically, the LSP's role will include, but may not be limited to, inspection and oversight of the following activities:

- Site preparation activities (e.g., survey, utility clearance, property protection measures, etc.);
- Soil excavation activities;
- Soil stockpiling and stockpile management;
- Off-site transportation of impacted material for reuse, recycling and/or disposal; and
- Excavation backfilling.

The LSP will also manage soil characterization off-site disposal and will procure any additional required laboratory analyses of these samples.

The LSP will prepare and sign MCP Bills of Lading (BOLs) and/or Material Shipping Records (MSR) required for the off-site shipment of excavated soil from the Site.

In accordance with the Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) standard (29 CFR 1910.120 and 1926.65), the LSP will prepare a Site Parcel-specific Health and Safety Plan (HASP) for this project for the protection of TRC personnel. The HASP will specify proper health and safety procedures to be implemented, and the necessary personal protective equipment to be used to protect workers from exposure to contaminated soil and groundwater during excavation. The City and/or Contractor will prepare a separate HASP prior to initiating work and must adhere to the requirements of that HASP during performance of the work. The City's and/or Contractor's employees assigned to the Site should have, at a minimum, 40-hour OSHA HAZWOPER training, and current 8-hour OSHA HAZWOPER refresher training as appropriate. The City's and/or Contractor's onsite foreman responsible for hazardous material should also have OSHA Site Supervisor Training.

1.3 Existing Site Conditions

The NBHS Campus is generally underlain by topsoil and up to approximately 6 feet of material that includes sandy soil with ash. In places, the ash includes broken glass, brick fragments, rubber, clinkers, coal, cinders, plastic and/or metallic fragments. Traces of land disturbance or disposal related fill were identified in soils 6 inches below ground surface, with a defined layer of fill identified at 24 inches to 36 inches below ground surface. Disposal-related fill thickness across the NBHS Campus ranges from 0.1 feet to 11.0 feet. Anthropogenic fill materials within the NBHS Campus are underlain by approximately 0.25 to 6.0 feet of native dark brown organic peat material, mixed with silt and clay in places from the wetland that predates the development of the area. Native soils below the organic peat are characterized by gray fine silty sands with trace gravel and/or medium sand in places.

Observation of NBHS Campus soils and review of historic topographic maps indicates that the surficial geology consists of glacial outwash sediments. Drumlins flank the NBHS Campus to the east and west.

Based on review of the USGS Bedrock Geologic Map of Massachusetts (Zen et al., 1983), bedrock beneath the NBHS Campus is light gray, pinkish-gray to tan, mafic-poor granite known as Alaskite.

Based on literature values, the peat layer is expected to exhibit low hydraulic conductivity, on the range of 10^{-6} to 10^{-3} centimeters per second (cm/sec), while glacial outwash deposits having relatively less fine material could exhibit a hydraulic conductivity range of 10^{-3} to 15 cm/sec. The hydraulic conductivity of the ash fill could be as low as approximately 4.4×10^{-5} cm/sec with higher hydraulic conductivities (10^{-1} cm/sec) a possibility depending on the relative amounts of sand and ash. Since the deposition in the fill material is fairly loose, based on observations made during boring advancement, the hydraulic conductivity of the fill material is estimated to be higher than the underlying peat layer.

The City of New Bedford receives an average of 50.81 inches of precipitation annually (http://www.usclimatedata.com). There are no surface water bodies at the NBHS Campus.

1.3.1 Management Procedures for Remediation Waste (310 CMR 40.0030)

The MCP establishes requirements and procedures for the management of remediation waste including impacted media and debris and non-containerized waste. This section of the MCP also outlines procedures for documenting and tracking any off-Site transportation and disposal of regulated soil from a disposal site using a MCP BOL. The BOL requirements and procedures will apply to impacted soils transported from the Site, provided the soils are not otherwise characterized as hazardous waste pursuant to 310 CMR 30.000, the *Massachusetts Hazardous Waste Regulations*.

1.3.2 Interim Waste Management Policy for Petroleum-Impacted Soils (WSC-94-400)

This policy outlines management practices for reuse, recycling, disposal, storage and transport of petroleum-impacted soils, and presents related guidance. The policy's goals include encouraging management practices that provide for the destruction of volatile organic compounds (VOCs) or that minimize the potential for migration/release of contaminants. Policy WSC-94-400 also encourages recycling of impacted soils (e.g., asphalt batch recycling) and includes guidelines for testing, storage, reuse/recycling, and establish acceptance criteria at recycling facilities.

1.3.3 Reuse and Disposal of Impacted Soil at Massachusetts Landfills (COMM-97-001)

This policy outlines procedures for reuse or disposal of impacted soils at Massachusetts-permitted landfills. The policy includes guidelines for testing, transport, record keeping, reporting, and establishes acceptance criteria for lined and unlined landfills.

Note that the reference to MassDEP policies COMM-97-001 and WSC-94-400 does not preclude the use of out-of-state facilities that offer similar reuse (e.g., landfill daily cover) or recycling (e.g., asphalt batch) opportunities. Such opportunities may be evaluated and/or utilized on a case-by-case basis assuming facility acceptance criteria can be met and the facility is currently within its regulatory jurisdiction for the reuse and/or recycling services provided.

1.3.4 Bill of Lading (BWSC Forms 012A, 012B and 012C)

The BOL tracks the transportation and final disposition of Remediation Wastes generated during the performance of response actions under the MCP. BOLs may be used to record the shipment of impacted soil from the Site to a reuse, recycling and/or disposal facility approved by the Owner and LSP. BOLs will be stamped and signed by the LSP.

1.3.5 Hazardous Waste Manifest

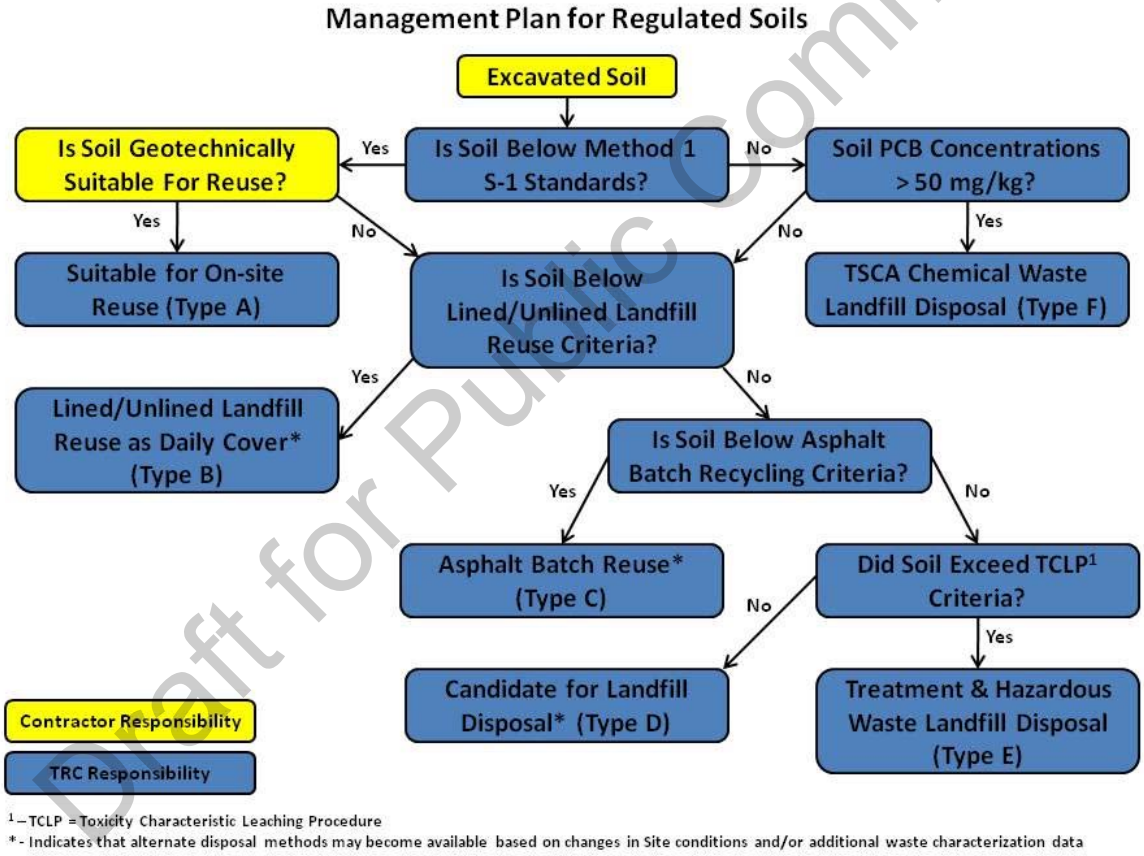
A Hazardous Waste Manifest is a MassDEP-approved form used to track the origin, quantity, composition, transportation and final destination of hazardous waste. Hazardous Waste Manifests should be utilized for shipping of any wastes subject to the Massachusetts Hazardous

Waste Regulations (310 CMR 30.000). The Contractor will prepare a Hazardous Waste Manifest if required (but not anticipated) for transport of the materials from this Site Parcel. The hazardous waste disposal facility to be used for disposal of any such material will be subject to approval by the LSP. Other requirements apply as described in 310 CMR 30.310. It is not anticipated that the generation of hazardous waste will be a part of this project.

2.0 EXCAVATION OVERSIGHT

Oversight will occur during remediation activities. The soil oversight personnel will provide clarification regarding the soil category to the City and/or Contractor using pre-characterization analytical data to ensure soil is segregated appropriately pending final reuse, recycling and/or disposal determinations.

Typical soil management options for a remediation project at a Disposal Site may include on-site reuse; offsite reuse/recycling; disposal at an approved and appropriately licensed non-hazardous waste, lined or unlined landfill; and disposal at an approved and appropriately licensed hazardous waste landfill. The determination of the reuse, recycling, or disposal option for soils from different portions of the excavation will consider physical and chemical characteristics of the soil and the reuse capacity within the construction project, as shown in the following flow diagram:



Typical soil management options for a remediation project at a Disposal Site may allow soil to be returned to the approximate location from which it came providing that it is chemically and geotechnically suitable for reuse as backfill, with the geotechnical suitability determined by the construction Contractor and/or project Architect/Engineer. Chemical suitability is determined by the LSP. Soil that is suitable for on-site reuse may be returned directly to the excavation or stockpiled for later reuse at an off-site location. Soil that has been deemed unsuitable for reuse

on-site will be live loaded for offsite disposal or, alternatively, segregated and stockpiled off-site for off-site management (off-site reuse and/or disposal).

2.1 Soil Classification

Soil excavated during remediation activities will be classified by the following criteria. If the criteria are not in agreement, then the classification will be made based on the highest ranked factor.

1) Pre-characterization data;
2) Physical observations of ash-bearing "fill" material; and
3) Physical observations of other anthropogenic "fill" material.

Soil at a Disposal Site displaced by remediation and/or construction activities may be segregated into one or more of the following classifications:

- Type A – Pre-characterized soils for reuse on-site; excess Type-A soil also suitable for off-site reuse as cover material at a lined or unlined landfill facility. On-site reuse is restricted to the location from which the soils were excavated;
- Type B – Suitable for unlined or lined landfill re-use (chemically unsuited for reuse on-site);
- Type C – Suitable for asphalt batch recycling (geotechnically unsuited for reuse on-site and/or chemically unsuited for reuse on-site or off-site);
- Type D – Non-hazardous waste landfill disposal (chemically unsuited for on or off-site reuse, and off-site recycling);
- Type E – Soil requiring segregation and off-site treatment prior to disposal as a hazardous waste; and
- Type F – Soil requiring disposal at TSCA chemical waste landfill.

The above outlined classification process is may produce one or more of the following five soil types:

Type A soils are eligible for on-site reuse restricted to the location from which the soils were excavated. Any on-site re-use requires prior approval of the LSP. Other excavated soils will not be reused on-site unless otherwise notified.

Type B soils have been pre-characterized as unsuitable for on-site reuse or the soil may be geotechnically unsuitable for on-site reuse as deemed by the City and/or Contractor. These soils can be transported offsite for reuse as cover material at a lined or unlined landfill facility (depending upon acceptance criteria comparisons). If these soils indicate concentrations below their applicable off-site facility acceptance criteria, they will be segregated and transported offsite for re-use at a lined or unlined landfill facility.

Type C soils are suitable for recycling at an off-site asphalt batch facility.

Type D soils do not indicate a failure of Toxicity Characteristic Leachate Procedure (TCLP) analysis. Therefore, these soils may be segregated and transported offsite for disposal at a non-hazardous waste landfill.

Type E soils have failed TCLP analysis and will be segregated for off-site disposal as hazardous waste.

Type F soils contain concentrations of PCBs greater than 50 mg/kg and will be segregated for off-site disposal at a TSCA chemical waste landfill.

Soil type determinations will be made by the LSP following the collection of suitable pre-characterization or stockpile characterization data.

3.0 ON-SITE SOIL MANAGEMENT

3.1 Onsite Stockpile Disposition

The anticipated maximum excavation extents are approximately 25-feet by 10-feet, with a maximum depth of approximately 1-foot below grade. These limits are subject to expansion or reduction based on the final design specifications and/or field observation (e.g., presence of subsurface utilities) during RAM implementation. Given the relative size of the proposed excavation, the use of an excavator is anticipated to facilitate excavation and removal of the soil. Hand tools may also be employed throughout the excavation process.

Following soil excavation activities, a concrete pad will be installed within the excavation footprint to facilitate installation of an air cooled condenser. A limited volume of imported material may be used to backfill portions of the excavations in support of construction and/or to reestablish grassed areas damaged during construction activities. Imported material (i.e., topsoil) will be documented compliant prior to being used onsite (as needed). The backfill material will be compacted with the excavator bucket in less than or equal to one foot lifts, making proper allowances for placement of the concrete pad or topsoil, and re-seeded or finished with the installation of new sod.

The excavated material will either be live-loaded directly into trucks or temporarily stockpiled on-site on polyethylene sheeting (10 mil minimum) adjacent to the excavation. Alternatively, excavated material may be transported to a City-owned property for temporary stockpiling. The material will be stockpiled on polyethylene sheeting (10 mil minimum) pending off-site reuse, recycling and/or disposal.

3.2 Offsite Reuse, Recycling and/or Disposal

Excavated soil will be transported from the Site to be characterized for offsite disposal at a suitable facility. Several suitable offsite facilities exist, but the facility locations have not been finalized. Segregated soil will be targeted for reuse by the City. Stockpile characterization data will be used to explore disposal and reuse options. The existing Site data would be supplemented as necessary to satisfy facility-specific acceptance criteria. The sample laboratory data would be compared against Massachusetts reuse, recycle, and disposal criteria in accordance to MassDEP Policy# COMM-97-001 and Interim Policy #WSC-94-400.

Transportation of all materials from the site would be performed using a MassDEP BOL, MSR or Hazardous Waste Manifest, and would be performed within 120 days of stockpiling in accordance with 310 CMR 40.0030 of the MCP.

3.3 Decontamination of Vehicles Transporting Soils

Vehicles used for the RAM activities may require decontamination. In the event vehicle decontamination is appropriate, soils and mud would be removed from vehicles prior to their departure from the Site. The method of soil removal would likely be a combination of brushing

the wheels to remove loose soils. Any liquids generated by vehicle decontamination (not anticipated) would be drummed and transported offsite for disposal.

In addition, the City and/or Contractor would be responsible for ensuring that tracking of potentially contaminated soil onto public roadways is prevented.

Decontamination procedures may be modified at the discretion of the LSP if differing site conditions or regulatory requirements are encountered. Any modifications would be documented.

3.4 Supplementary Stockpile Characterization

Prior to transport and disposal of stockpiled soils, soils stockpiled for disposal would be evaluated to determine whether sufficient analytical data is available to satisfy the requirements of the selected disposal or recycling facility. Soil samples would be collected and analyzed according to the analytes and the sampling frequency specified by the selected disposal facility.

The City, at its option, may stockpile soils displaced by the project, if any, at the Shawmut Avenue Transfer Station or another City-owned property.

3.5 Environmental Monitoring

TRC personnel will be onsite during excavation activities, and will conduct environmental monitoring activities as described herein.

3.5.1 Field Screening Associated with Soil Removal

Field screening of soil may be conducted as part of the RAM to monitor soil conditions and excavation progress.

3.5.1.1 Jar-Headspace Field Screening of Soils

VOCs are not a COPC for material targeted by this RAM Plan. Should it be deemed necessary based on site-specific conditions, soil samples will be screened via the MassDEP jar-headspace method for the potential presence of VOCs based on professional judgment and at the discretion of the LSP.

3.5.2 Air Monitoring

Should visual or olfactory observations indicate the potential presence of unanticipated soil impacts and/or the potential need for upgrades in PPE to appropriately protect work safety, VOC air monitoring will be performed using a PID to monitor for the presence of VOCs within the work area breathing zone. Based on previously existing Site data, significant VOC emissions are not expected during construction.

Instrument readings from breathing zones within the work zone will be used to help evaluate the need for instituting additional safety measures or upgrading PPE levels.

APPENDIX C

MUNICIPAL NOTIFICATION LETTERS

AS REQUIRED BY 310 CMR 40.1403(3)(D), THE MAYOR AND THE BOARD OF HEALTH FOR THE CITY OF NEW BEDFORD WILL BE NOTIFIED IN WRITING OF THE PROPOSED RAM ACTIVITIES. COPIES OF THE NOTIFICATION LETTERS WILL BE SENT TO THE MAYOR AND BOARD OF HEALTH UPON FINALIZATION OF THE RAM PLAN AND INCLUDE THEREIN AS APPENDIX C.