REPORT

Phase II Comprehensive Site Assessment/Partial Response Action Outcome (RAO-P) Report

Liberty Street Parcel
New Bedford, Massachusetts
RTN 4-15685

City of New Bedford
New Bedford, Massachusetts

June 2013

CDM Smith

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Section 1
Introduction

This combined Phase II Comprehensive Site Assessment (CSA) and Partial Response Action Outcome (RAO-P) has been prepared for the City of New Bedford (the City) for the Liberty Street Parcel (also referred to as the Slim Parcel). **Figure 1-1** shows the location of the site. This Phase II CSA/RAO-P documents the presence of coal/coal ash across the site where impacted historic fill soils were observed to contain coal, coal ash, and clinkers. Microscopic analysis confirmed the presence of coal ash, signifying fill typical of urbanized locations where historical use of coal was the primary fuel source for heat and power.

This Phase II CSA/RAO-P Report has been prepared in accordance with the provisions set forth in 310 CMR 40.0830 and 310 CMR 40.1056, which present the requirements for conducting a Phase II CSA and content of an RAO, respectively. A Class B-2 RAO-P has been achieved for the Liberty Street portion of RTN 4-15685. In accordance with 40.1403, the Chief Municipal Officer and Board of Health Commission were notified of the submission of the Phase II/RAO-P Report. Copies of the letters sent to these officials are provided in **Appendix A.**

1.1 Person Undertaking the Phase II CSA/RAO-P

Responsible Party	City of New Bedford – Department of Environmental Stewardship 133 William Street New Bedford, Massachusetts 02740 Attn: Michele S.W. Paul, LSP Director Telephone: (508) 991-6188
Licensed Site Professional (LSP)	Ms. Kathleen G. Murphy, P.E., LSP LSP Registration No. 8744 CDM Smith 50 Hampshire Street Cambridge, Massachusetts 02139 Telephone: (617) 452-6203

1.2 Site Background

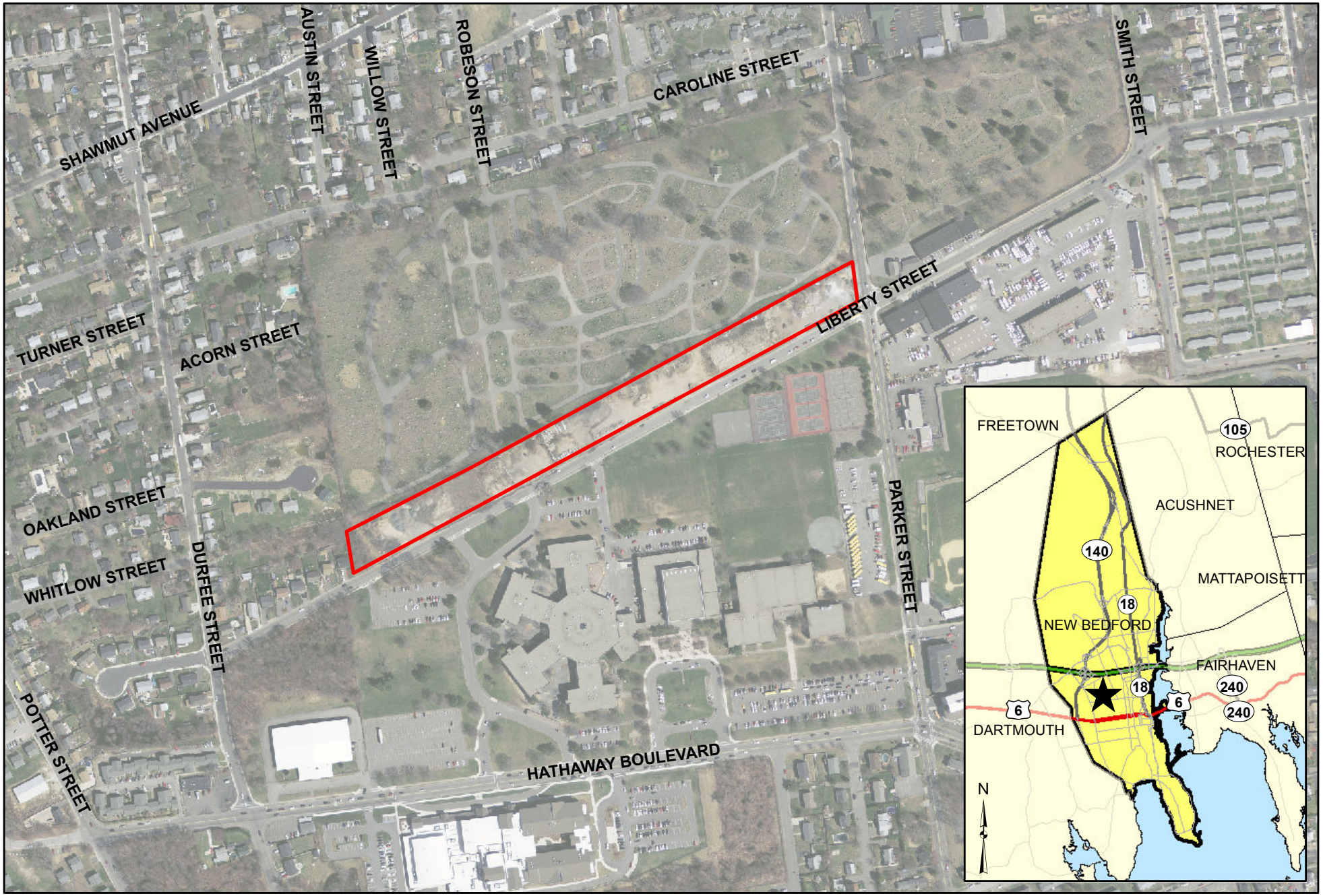
The site is a parcel along Liberty Street in New Bedford, Massachusetts currently operated by the City as a maintenance and storage yard for the Departments of Public Infrastructure (DPI) and Public Facilities (DPF). The parcel is being considered for installation of solar panels, which will be maintained by others. When the solar panels are installed, the site will be fenced, thereby restricting site access to authorized personnel for solar panel maintenance. This approach is also consistent with Massachusetts Department of Environmental Protection's (MassDEP's) encouragement of the use of Brownfields parcels for alternative energy sites. Site data collected throughout investigations supports that historic fill is the sole source of compounds of concern on the Liberty Street parcel.

1.3 Regulatory Status

The subject site (Liberty Street Parcel) is managed by MassDEP under Release Tracking Number (RTN) 4-15685. Figure 1-1 shows a locus plan. RTN 4-15685 consists of multiple properties owned by the City. The RTN has a Special Project Designation by the MassDEP. The compounds of concern for RTN 4-15685 are polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs) and metals related to impacted fill material.

Field investigations have been conducted on the Liberty Street Parcel by TRC Environmental Corporation (TRC) and CDM Smith. This data is summarized in Section 2 of this report. The data collected to date indicates the historic fill compounds at the Liberty Street Parcel are mainly related to coal/coal ash and clinkers. A review of the data as well as historical records signifies that the ash and urban fill identified at the Liberty Street Parcel is unrelated to the Parker Street Waste Site, although response actions described herein were required to be undertaken in relation to RTN 4-15685. This is further discussed in the Section 3 Conceptual Site Model. This conclusion is consistent with earlier investigations supporting the Parker Street Waste Site boundaries to be Liberty Street to the east and Parker Street to the south. Furthermore, under Massachusetts General Law, fly ash, bottom ash, clinkers, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels are exempt from regulation as hazardous waste. Additionally, ash produced from combustion of coal is exempt from regulation as solid waste if beneficially reused for select applications.

A separate RTN (4-22269) was also assigned to a portion of the site due to three 55-gallon drums which were deposited on the City's property by an unknown party. One of the drums was leaking a material that appeared to be asphalt emulsifier. An Immediate Response Action (IRA) was conducted by TRC for the City and this RTN was closed-out with a Class A-1 RAO in March 2010.



Locus Plan
Liberty Street Parcel
New Bedford, MA

Figure 1-1

Legend

Liberty Street Parcel

Basemap source: MassGIS

1 inch = 400 feet

0 200 400 Feet

CDM Smith

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Section 2
Physical and Chemical Site Characteristics

This section summarizes the subsurface conditions and soil sampling and analysis and related data collected on the Liberty Street Parcel. Data was collected by others in 2008, 2009 and 2010. CDM Smith then conducted 2 test pit programs in 2011 and 2012.

2.1 Geology and Hydrogeology

2.1.1 Geology

CDM Smith oversaw two test pit exploration programs in November 2011 and May 2012, respectively. Eleven test pits were excavated in November 2011 (TP-1 through TP-11) and six test pits (TP-A through TP-F) were excavated in May 2012. During both test pit programs fill material consisting of brown well-graded sand and gravel with brick, glass, wood, clay pipes and ash was observed from approximately one to six feet below ground surface. The top 12 inches above the fill material were generally a brown topsoil material consisting of well-graded sand and silt. Groundwater was observed in TP-E at approximately five feet below ground surface. Test pits were excavated to a maximum depth of six feet below ground surface during the test pit programs. Given that the test pit exploration programs were limited to the top six feet in order to observe the fill conditions at the site, subsurface geology below this depth was not encountered or observed.

The surficial geology of the Liberty Street area of New Bedford, Massachusetts is described by Stone et al. as thin glacial till or moraine deposits. These deposits consist of a non-sorted, non-stratified matrix of sand, some silt, and little clay with gravel and trace boulders. The material is loose to moderately compact and is generally less than ten to 15 feet thick (Stone et al., 2011). It is expected that glacial till material lies below the fill material at the site; however, the depth to the top of till is unknown since exploration activities did not extend to that depth.

2.1.2 Hydrogeology

As noted above, groundwater was observed at the site at a depth of five feet below ground surface in TP-E. Groundwater flowed into the bottom of TP-E at a slow to moderate rate of approximately 1-2 gallons per minute. A 2011 Comprehensive Site Assessment completed by TRC for the New Bedford High School campus documented groundwater flow in a southeasterly direction. The New Bedford High school is located directly to the west of the Site across Liberty Street. The site is located approximately 1.2 miles from the Acushnet River, which is connected directly to Buzzards Bay. According to the United States Geological Survey (USGS) topographic map the topography of the site is relatively flat and then descends steeply to the east near the river (USGS, 2012). Given the proximity of the site to the river and bay it is likely that groundwater generally flows from the site to the east towards the Acushnet River.

2.2 Data Summary

2.2.1 Data Collected by Others

Three available data sets were identified for the Slim Parcel: 1) soil boring data collected along the edge of the property along Liberty Street and identified as “Transect B” data; 2) soil data associated

with a URAM on the subject site; and 3) soil data collected following remediation of soil after three 55-gallon drums were deposited by "person or persons unknown" on the subject property. In total, 43 soil samples were collected and analyzed as part of the three data sets evaluated below. **Appendix B** contains the Figures and Tables showing the sampling locations and the results.

Based on site characteristics and receptors, applicable Method 1 standards for the site are S-1/GW-3 for the top 3 feet and S-2/GW-3 for material below 3 feet.

Data Set 1: Transect B Data

TRC Environmental Corporation (TRC) installed 11 soil borings for the City of New Bedford in June 2008. The TRC data set consists of analytical results for a total of 23 soil samples. Samples were analyzed for polycyclic aromatic hydrocarbons (PAHs), PCBs and metals. All samples were collected at depths below 3 feet.

Lead was detected at concentrations ranging from 2.5 ppm to 5580 ppm.

Data Set 2: URAM Data

A Utility-Related Abatement Measure (URAM) was conducted on the property under RTN 4-15685 by TRC for the City of New Bedford. This data set consists of 15 soil samples from 5 site locations (SB-LSD-4 through SB-LSD-8) analyzed for PCB Aroclors. The sampling depths were consistently 0-1, 1-3 and 3.5-4.5 feet below ground surface proximate to the trench. Total PCBs calculated by summing the Aroclor results in one sample (SB-LSD-5; 1-3 feet) was 3.9 mg/kg, while the results from the remaining samples ranged from non-detect to less than 1 mg/kg.

The bill of lading (BOL) identifies the excess trench material as historic fill. The stockpile characterization data identifies individual PAHs present at concentrations of 1 mg/kg or less, PCBs (Aroclor 1254) at 0.13 mg/kg, and lead at 510 mg/kg. The data indicate consistency with the related historic fill soil concentrations.

Data Set 3: The Drums deposited on the City Property by Others (Spill Data)

Three 55-gallon drums were deposited on the City's property by an unknown party. One of the drums was leaking a material that appeared to be asphalt emulsifier. An Immediate Response Action (IRA) was conducted by TRC for the City of New Bedford under RTN 4-22269. Five soil samples were collected from this area and submitted for laboratory analysis of volatile organic compounds (VOCs), extractable petroleum hydrocarbons (EPH) and PAHs. VOCs were not present above detection limits. EPH and PAHs were detected at concentrations that supported a Class A-1 RAO for the release, signifying that response actions achieved conditions consistent with background.

2.2.2 Test Pit Program (November 2011)

On November 9, 2011, CDM Smith collected samples from 11 test pits which were advanced approximately every 100 feet along the center of the parcel. **Figure 2-1** shows the locations of the test pits.

Test pits were generally advanced to approximately 4 to 6 feet below ground surface. Samples were collected as composite samples from 0-3 feet from each test pit and analyzed for semi-volatile organic compounds (SVOCs) and RCRA metals. Two samples were collected from the coal ash material found in TP-02, which is located approximately 100 feet north of Parker Street.

On-Site Monitoring and Observations

During test pit operations, CDM Smith used a photo ionization detector (PID) to detect volatile compounds (VOCs), and a dust meter. No VOCs were recorded above detection limits and dust measurements ranged from 0 mg/m^3 to 0.055 mg/m^3, below the respirable dust criteria of 3 mg/m^3. The dust readings were collected directly over the test pit locations; no sustained readings of dust were observed over 0 mg/m^3.

Material in the top 5 feet was sand and gravel. For most of the test pits, no debris was observed. Some debris (brick, clay pipe) was observed in TP-02. This was the only location were coal ash was observed at approximately 4 feet below ground surface. Small amounts of debris (brick) were observed in TP-03 and TP-08. No odors were noted in any of the test pits.

Analytical Data

Table 2-1 provides a summary of the analytical data. Metals including arsenic, chromium, lead and mercury and some SVOCs were detected. With the exception of lead, metal concentrations were consistent with DEP's established natural soil concentrations.

Appendix C contains the results of the two samples which were analyzed for coal ash at TP-2. The analysis confirms the presence of coal and coal ash in these samples.

2.2.3 Test Pit Program (May 2012)

On May 24, 2012, CDM Smith conducted additional test pitting to further characterize the lead concentration previously identified at location SB-212, which was installed by TRC in July 2008. The sample collected at 4' from this location contained 2420 ppm and 5580 ppm in the duplicate sample (a large relative percent difference between the results).

One test pit (TP-A 4') was completed near the original location SB-212 and five test pits were installed approximately 10' from the original location. Figure 2-1 shows the locations of these test pits along with the original SB-212 location. Lead concentrations ranged from 67 ppm at location TP-A 4' to 550 ppm at location TP-E 5'. **Table 2-2** provides the lead results for these test pits.

2.3 Nature and Extent of Contamination

The site is a relatively narrow parcel of land located between Liberty Street and Oak Grove Cemetery in New Bedford, Massachusetts. Based on the data collected at the site and a review of the historical records, the source of impacted soil at the site is historic urban fill material that contains coal ash, as confirmed by two samples collected during the November 2011 test pit program that were analyzed using microscopy techniques. The historical record suggests that historic fill was present at the base of Liberty Street and additional relatively clean fill was subsequently added. The parcel eventually used by the City as a storage area. The most recent test pit logs from May 2012 indicate that fill soil is located to a depth of at least four to five feet below ground surface. Historic fill material was also observed in the subsurface material by CDM Smith and TRC during previous site investigations. The material was described as soil with debris, including brick, cinders, glass, and clinkers along with a layer of ash material containing combusted and uncombusted coal and wood fragments. Thus, the site investigations indicate that the fill material is widely distributed across the site, both horizontally within the boundary of the site and vertically to depths of approximately five feet.

The compounds identified in site soil support the conclusion that impacts are associated with fill material. Compounds detected in the site surface soil (zero to 3 feet) and site-wide data set (zero to

15 feet) include metals, EPH ranges, PAH target analytes, and PCBs. The concentrations of metals and PAHs were below typical background concentrations associated with coal or wood ash. The data and historical record indicate that soil impact is likely associated with wide distribution of fill material across the site. However, due to the chemical properties and nature of metals, PAHs, and PCBs identified in soil at the site, they are likely to remain in the soil matrix. Due to their low solubility in water, metals, PAHs, and PCBs found in site soil are not likely to impact groundwater. Thus, groundwater, which is located approximately five to seven feet below ground surface, is not a medium of concern for the Liberty Street Parcel.

2.4 Fate and Transport of Site Contaminants

Fate and transport information describes how chemicals degrade and where they travel in the environment, whether naturally occurring or released. Chemicals in the environment are analyzed in terms of a modeling system that indicates not only how the chemicals move through air, water, and soil (transport), but also how the chemicals change in the presence of other chemicals and particles (fate). The primary constituents identified in soil at the site include metals, PAHs, and PCBs.

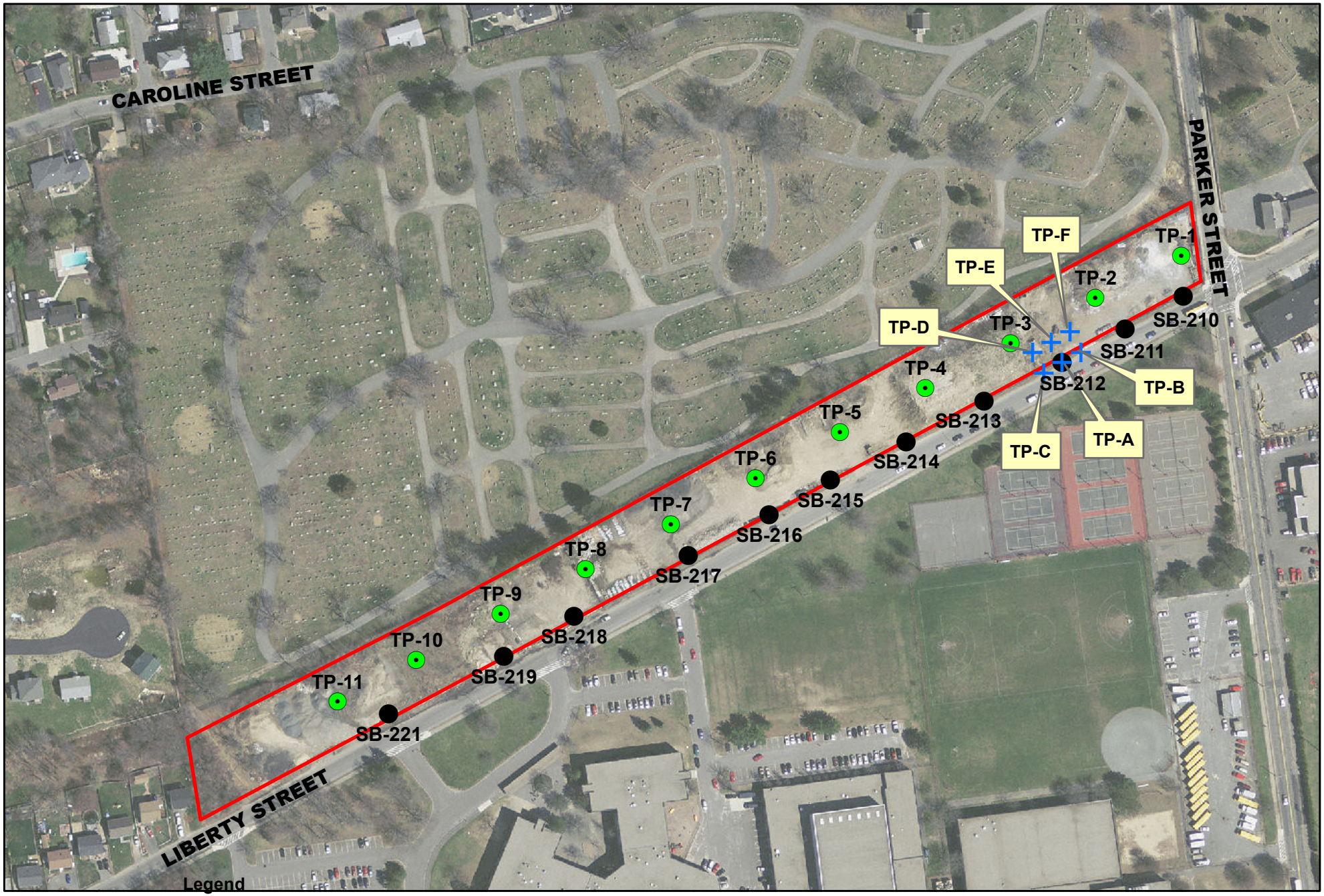
Metals vary widely in chemical form and properties; however, none degrade in the environment, many exist naturally in soil, and a few (e.g., copper and zinc) are essential nutrients. The fate of metals in the environment is primarily dependent on sorption, chemical speciation, complexation, biotransformation, and bioaccumulation. Metals occurring in soil may be sorbed to particles (silt- and clay-size), bound in a complex molecule, bound in a precipitate (e.g., sulfides), or may exist in a free ionic state. They tend to be stable, persistent, and not volatile. Some metals, like mercury, are bioaccumulative. Metals at concentrations present at the site are expected to remain limited to soil, since they tend to bind to particulate matter.

PAHs include a wide variety of chemicals that are ubiquitous in the environment. Included in this category are low and high molecular weight PAHs. Similar to metals, they tend to bind to particulate matter and are not likely to leach to groundwater at concentrations present on the site. They are also generally stable, persistent, and not volatile. In spite of the high lipid solubility of some PAHs, they have low bioaccumulation potential because these compounds are rapidly metabolized.

PCBs are a group of synthetic organic chemicals that contain many individual congeners with varying potential harmful effects. They are persistent in the environment and degradation by biological and other means is minimal. Most of these compounds are lipophilic, with a tendency to accumulate in the liver and other fatty tissues and bioaccumulate within the food chain. There are no known natural sources of PCBs in the environment. Before 1977, PCBs entered the air, water, and soil during their manufacture and use. PCBs also entered the environment from accidental spills and leaks during the transport of the chemicals, or from leaks or fires in transformers, capacitors, or other products containing PCBs. In water, a small amount of PCBs may remain dissolved but most tend to adhere to particles and sediments. PCBs bind strongly to soil and may remain there for several years. PCBs partially evaporate from soil surfaces to air. In general, the breakdown of PCBs in the water and soil occurs over several years, or even decades. PCBs are likely tightly bound to soil particles and will not migrate significantly. Thus, at this site they are expected to remain in soil and not leach to groundwater.

The site is currently undeveloped and unpaved, with exposed soil; however; the proposed future use of the property is to house solar panels and is to be surrounded by a fence, limiting access. As described above, it is unlikely that the constituents will migrate, as they are stable in nature and are

unlikely to leach to groundwater. The nearest water body is the Acushnet River, which is located approximately 1.2 miles to the east of the Site. Since the river is more than a mile from the site and impact is limited to soil given the chemical and physical properties of chemicals of concern soil impact is not expected to migrate to surface water or sediment in the river.



Test Pit Locations
Liberty Street Parcel
New Bedford, MA

1 inch = 200 feet

0 100 200 400 Feet

Basemap source: MassGIS

Figure 2-1

CDM Smith

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Table 2-1
Nov. 2011 Test Pit Data
Liberty Street Parcel

LOCATION			**TP-01**		**TP-02**		**TP-03**		**TP-04**		**TP-05**		**TP-06**
SAMPLING DATE			**09-NOV-11**		**09-NOV-11**		**09-NOV-11**		**09-NOV-11**		**09-NOV-11**		**09-NOV-11**
LAB SAMPLE ID			**L1118751-01**		**L1118751-02**		**L1118751-03**		**L1118751-04**		**L1118751-05**		**L1118751-06**
Depth			**0-3'**		**0-3'**		**0-3'**		**0-3'**		**0-3'**		**0-3'**
	S-1/GW-3	**Units**		**Qual**		**Qual**		**Qual**		**Qual**		**Qual**	
MCP Total Metals - Westborough Lab													
Arsenic, Total	**20**	**mg/kg**	**4.4**		**4.6**		**2.1**		**2**		**1.6**		**1.2**
Cadmium, Total	**2**	**mg/kg**	**0.42**	**U**	**0.42**	**U**	**0.42**	**U**	**0.4**	**U**	**0.41**	**U**	**0.4**
Chromium, Total	**30**	**mg/kg**	**9.7**		**10**		**14**		**10**		**15**		**12**
Lead, Total	**300**	**mg/kg**	**190**		**43**		**180**		**47**		**260**		**38**
Mercury, Total	**20**	**mg/kg**	**0.18**		**0.08**		**0.13**		**0.12**		**0.09**		**0.1**
MCP Semivolatile Organics - Westborough Lab													
1,2,4-Trichlorobenzene	**500**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
1,2-Dichlorobenzene	**300**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
1,3-Dichlorobenzene	**100**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
1,4-Dichlorobenzene	**50**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
2,4,5-Trichlorophenol	**600**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
2,4,6-Trichlorophenol	**20**	**mg/kg**	**1.1**	**U**	**0.21**	**U**	**1.1**	**U**	**0.2**	**U**	**2**	**U**	**0.98**
2,4-Dichlorophenol	**40**	**mg/kg**	**1.6**	**U**	**0.32**	**U**	**1.6**	**U**	**0.31**	**U**	**3**	**U**	**1.5**
2,4-Dimethylphenol	**500**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
2,4-Dinitrophenol	**50**	**mg/kg**	**8.6**	**U**	**1.7**	**U**	**8.5**	**U**	**1.6**	**U**	**16**	**U**	**7.8**
2,4-Dinitrotoluene	**2**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
2,6-Dinitrotoluene	**-**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
2-Chloronaphthalene	**-**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
2-Chlorophenol	**100**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
2-Methylnaphthalene	**300**	**mg/kg**	**2.2**	**U**	**0.43**	**U**	**2.1**	**U**	**0.41**	**U**	**4**	**U**	**2**
2-Methylphenol	**-**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
2-Nitrophenol	**-**	**mg/kg**	**3.9**	**U**	**0.77**	**U**	**3.8**	**U**	**0.74**	**U**	**7.2**	**U**	**3.5**
3,3'-Dichlorobenzidine	**1**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
3-Methylphenol/4-Methylphenol	**-**	**mg/kg**	**2.6**	**U**	**0.51**	**U**	**2.6**	**U**	**0.49**	**U**	**4.8**	**U**	**2.4**
4-Bromophenyl phenyl ether	**-**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
4-Chloroaniline	**3**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
4-Nitrophenol	**-**	**mg/kg**	**2.5**	**U**	**0.5**	**U**	**2.5**	**U**	**0.48**	**U**	**4.7**	**U**	**2.3**
Acenaphthene	**1000**	**mg/kg**	**1.4**	**U**	**0.28**	**U**	**1.4**	**U**	**0.27**	**U**	**2.7**	**U**	**1.3**
Acenaphthylene	**10**	**mg/kg**	**1.4**	**U**	**0.32**		**1.4**	**U**	**0.27**	**U**	**2.7**	**U**	**1.3**
Acetophenone	**-**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
Aniline	**-**	**mg/kg**	**2.2**	**U**	**0.43**	**U**	**2.1**	**U**	**0.41**	**U**	**4**	**U**	**2**
Anthracene	**1000**	**mg/kg**	**1.1**	**U**	**0.48**		**1.1**	**U**	**0.37**		**2**	**U**	**0.98**
Azobenzene	**-**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
Benzo(a)anthracene	**7**	**mg/kg**	**1.1**	**U**	**0.91**		**1.6**		**1.4**		**2**	**U**	**0.98**

Table 2-1
Nov. 2011 Test Pit Data
Liberty Street Parcel

LOCATION			**TP-01**		**TP-02**		**TP-03**		**TP-04**		**TP-05**		**TP-06**
SAMPLING DATE			**09-NOV-11**		**09-NOV-11**		**09-NOV-11**		**09-NOV-11**		**09-NOV-11**		**09-NOV-11**
LAB SAMPLE ID			**L1118751-01**		**L1118751-02**		**L1118751-03**		**L1118751-04**		**L1118751-05**		**L1118751-06**
Depth			**0-3'**		**0-3'**		**0-3'**		**0-3'**		**0-3'**		**0-3'**
	S-1/GW-3	**Units**		**Qual**		**Qual**		**Qual**		**Qual**		**Qual**	
Benzo(a)pyrene	**2**	**mg/kg**	**1.4**	**U**	**0.77**		**1.4**		**1.1**		**2.7**	**U**	**1.3**
Benzo(b)fluoranthene	**7**	**mg/kg**	**1.1**	**U**	**0.58**		**1.2**		**1.3**		**2**	**U**	**0.98**
Benzo(ghi)perylene	**1000**	**mg/kg**	**1.4**	**U**	**0.43**		**1.4**	**U**	**0.69**		**2.7**	**U**	**1.3**
Benzo(k)fluoranthene	**70**	**mg/kg**	**1.1**	**U**	**0.72**		**1.2**		**0.48**		**2**	**U**	**0.98**
Bis(2-chloroethoxy)methane	**-**	**mg/kg**	**1.9**	**U**	**0.38**	**U**	**1.9**	**U**	**0.37**	**U**	**3.6**	**U**	**1.8**
Bis(2-chloroethyl)ether	**0.7**	**mg/kg**	**1.6**	**U**	**0.32**	**U**	**1.6**	**U**	**0.31**	**U**	**3**	**U**	**1.5**
Bis(2-chloroisopropyl)ether	**3**	**mg/kg**	**2.2**	**U**	**0.43**	**U**	**2.1**	**U**	**0.41**	**U**	**4**	**U**	**2**
Bis(2-Ethylhexyl)phthalate	**200**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
Butyl benzyl phthalate	**-**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
Chrysene	**70**	**mg/kg**	**1.1**	**U**	**0.96**		**1.6**		**1.4**		**2**	**U**	**0.98**
Di-n-butylphthalate	**-**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
Di-n-octylphthalate	**-**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
Dibenzo(a,h)anthracene	**0.7**	**mg/kg**	**1.1**	**U**	**0.21**	**U**	**1.1**	**U**	**0.2**	**U**	**2**	**U**	**0.98**
Dibenzofuran	**-**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
Diethyl phthalate	**300**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
Dimethyl phthalate	**600**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
Fluoranthene	**1000**	**mg/kg**	**1.4**		**1.5**		**2.8**		**2.5**		**2.1**		**0.98**
Fluorene	**1000**	**mg/kg**	**1.8**	**U**	**0.36**		**1.8**	**U**	**0.37**		**3.3**	**U**	**1.6**
Hexachlorobenzene	**0.7**	**mg/kg**	**1.1**	**U**	**0.21**	**U**	**1.1**	**U**	**0.2**	**U**	**2**	**U**	**0.98**
Hexachlorobutadiene	**6**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
Hexachloroethane	**9**	**mg/kg**	**1.4**	**U**	**0.28**	**U**	**1.4**	**U**	**0.27**	**U**	**2.7**	**U**	**1.3**
Indeno(1,2,3-cd)Pyrene	**7**	**mg/kg**	**1.4**	**U**	**0.4**		**1.4**	**U**	**0.73**		**2.7**	**U**	**1.3**
Isophorone	**-**	**mg/kg**	**1.6**	**U**	**0.32**	**U**	**1.6**	**U**	**0.31**	**U**	**3**	**U**	**1.5**
Naphthalene	**500**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
Nitrobenzene	**-**	**mg/kg**	**1.6**	**U**	**0.32**	**U**	**1.6**	**U**	**0.31**	**U**	**3**	**U**	**1.5**
Pentachlorophenol	**10**	**mg/kg**	**3.6**	**U**	**0.71**	**U**	**3.6**	**U**	**0.68**	**U**	**6.7**	**U**	**3.3**
Phenanthrene	**500**	**mg/kg**	**1.1**	**U**	**1.6**		**2.1**		**3.6**		**2**	**U**	**0.98**
Phenol	**20**	**mg/kg**	**1.8**	**U**	**0.36**	**U**	**1.8**	**U**	**0.34**	**U**	**3.3**	**U**	**1.6**
Pyrene	**1000**	**mg/kg**	**1.2**		**1.7**		**3**		**3.1**		**2.2**		**1**

U = Below Detection Limits

Table 2-1
Nov. 2011 Test Pit Data
Liberty Street Parcel

LOCATION				**TP-07**		**TP-08**		**TP-09**		**TP-10**		**TP-11**	
SAMPLING DATE				**09-NOV-11**		**09-NOV-11**		**09-NOV-11**		**09-NOV-11**		**09-NOV-11**	
LAB SAMPLE ID				**L1118751-07**		**L1118751-08**		**L1118751-09**		**L1118751-10**		**L1118751-11**	
Depth				**0-3'**		**0-3'**		**0-3'**		**0-3'**		**0-3'**	
	S-1/GW-3	**Units**	**Qual**		**Qual**		**Qual**		**Qual**		**Qual**		**Qual**
MCP Total Metals - Westborough Lab													
Arsenic, Total	**20**	**mg/kg**		**1.6**		**1.6**		**7.3**		**1.5**		**0.72**	
Cadmium, Total	**2**	**mg/kg**	**U**	**0.4**	**U**	**0.41**	**U**	**0.47**	**U**	**0.45**	**U**	**0.44**	**U**
Chromium, Total	**30**	**mg/kg**		**12**		**16**		**10**		**11**		**9.5**	
Lead, Total	**300**	**mg/kg**		**47**		**57**		**240**		**26**		**6.3**	
Mercury, Total	**20**	**mg/kg**	**U**	**0.07**		**0.12**	**U**	**0.15**		**0.09**	**U**	**0.09**	**U**
MCP Semivolatile Organics - Westborough Lab													
1,2,4-Trichlorobenzene	**500**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
1,2-Dichlorobenzene	**300**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
1,3-Dichlorobenzene	**100**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
1,4-Dichlorobenzene	**50**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
2,4,5-Trichlorophenol	**600**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
2,4,6-Trichlorophenol	**20**	**mg/kg**	**U**	**2**	**U**	**4.2**	**U**	**1.2**	**U**	**0.23**	**U**	**0.22**	**U**
2,4-Dichlorophenol	**40**	**mg/kg**	**U**	**3**	**U**	**6.3**	**U**	**1.7**	**U**	**0.34**	**U**	**0.33**	**U**
2,4-Dimethylphenol	**500**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
2,4-Dinitrophenol	**50**	**mg/kg**	**U**	**16**	**U**	**33**	**U**	**9.2**	**U**	**1.8**	**U**	**1.8**	**U**
2,4-Dinitrotoluene	**2**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
2,6-Dinitrotoluene	**-**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
2-Chloronaphthalene	**-**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
2-Chlorophenol	**100**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
2-Methylnaphthalene	**300**	**mg/kg**	**U**	**4**	**U**	**8.4**	**U**	**2.3**	**U**	**0.46**	**U**	**0.44**	**U**
2-Methylphenol	**-**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
2-Nitrophenol	**-**	**mg/kg**	**U**	**7.2**	**U**	**15**	**U**	**4.2**	**U**	**0.82**	**U**	**0.79**	**U**
3,3'-Dichlorobenzidine	**1**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
3-Methylphenol/4-Methylphenol	**-**	**mg/kg**	**U**	**4.8**	**U**	**10**	**U**	**2.8**	**U**	**0.55**	**U**	**0.53**	**U**
4-Bromophenyl phenyl ether	**-**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
4-Chloroaniline	**3**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
4-Nitrophenol	**-**	**mg/kg**	**U**	**4.7**	**U**	**9.7**	**U**	**2.7**	**U**	**0.53**	**U**	**0.51**	**U**
Acenaphthene	**1000**	**mg/kg**	**U**	**2.7**	**U**	**5.6**	**U**	**1.5**	**U**	**0.3**	**U**	**0.29**	**U**
Acenaphthylene	**10**	**mg/kg**	**U**	**2.7**	**U**	**5.6**	**U**	**1.5**	**U**	**0.3**	**U**	**0.29**	**U**
Acetophenone	**-**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
Aniline	**-**	**mg/kg**	**U**	**4**	**U**	**8.4**	**U**	**2.3**	**U**	**0.46**	**U**	**0.44**	**U**
Anthracene	**1000**	**mg/kg**	**U**	**2**	**U**	**4.2**	**U**	**1.2**	**U**	**0.23**	**U**	**0.22**	**U**
Azobenzene	**-**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
Benzo(a)anthracene	**7**	**mg/kg**	**U**	**2.4**		**4.2**	**U**	**1.2**	**U**	**0.23**	**U**	**0.22**	**U**

Table 2-1
Nov. 2011 Test Pit Data
Liberty Street Parcel

LOCATION				**TP-07**		**TP-08**		**TP-09**		**TP-10**		**TP-11**	
SAMPLING DATE				**09-NOV-11**		**09-NOV-11**		**09-NOV-11**		**09-NOV-11**		**09-NOV-11**	
LAB SAMPLE ID				**L1118751-07**		**L1118751-08**		**L1118751-09**		**L1118751-10**		**L1118751-11**	
Depth				**0-3'**		**0-3'**		**0-3'**		**0-3'**		**0-3'**	
	S-1/GW-3	**Units**	**Qual**		**Qual**		**Qual**		**Qual**		**Qual**		**Qual**
Benzo(a)pyrene	**2**	**mg/kg**	**U**	**2.7**	**U**	**5.6**	**U**	**1.5**	**U**	**0.3**	**U**	**0.29**	**U**
Benzo(b)fluoranthene	**7**	**mg/kg**	**U**	**2**	**U**	**4.2**	**U**	**1.2**	**U**	**0.23**	**U**	**0.22**	**U**
Benzo(ghi)perylene	**1000**	**mg/kg**	**U**	**2.7**	**U**	**5.6**	**U**	**1.5**	**U**	**0.3**	**U**	**0.29**	**U**
Benzo(k)fluoranthene	**70**	**mg/kg**	**U**	**2**	**U**	**4.2**	**U**	**1.2**	**U**	**0.23**	**U**	**0.22**	**U**
Bis(2-chloroethoxy)methane	**-**	**mg/kg**	**U**	**3.6**	**U**	**7.5**	**U**	**2.1**	**U**	**0.41**	**U**	**0.39**	**U**
Bis(2-chloroethyl)ether	**0.7**	**mg/kg**	**U**	**3**	**U**	**6.3**	**U**	**1.7**	**U**	**0.34**	**U**	**0.33**	**U**
Bis(2-chloroisopropyl)ether	**3**	**mg/kg**	**U**	**4**	**U**	**8.4**	**U**	**2.3**	**U**	**0.46**	**U**	**0.44**	**U**
Bis(2-Ethylhexyl)phthalate	**200**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
Butyl benzyl phthalate	**-**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
Chrysene	**70**	**mg/kg**	**U**	**2.6**		**4.2**	**U**	**1.2**	**U**	**0.23**	**U**	**0.22**	**U**
Di-n-butylphthalate	**-**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
Di-n-octylphthalate	**-**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
Dibenzo(a,h)anthracene	**0.7**	**mg/kg**	**U**	**2**	**U**	**4.2**	**U**	**1.2**	**U**	**0.23**	**U**	**0.22**	**U**
Dibenzofuran	**-**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
Diethyl phthalate	**300**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
Dimethyl phthalate	**600**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
Fluoranthene	**1000**	**mg/kg**	**U**	**3.5**		**5.2**		**1.2**		**0.23**	**U**	**0.22**	**U**
Fluorene	**1000**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
Hexachlorobenzene	**0.7**	**mg/kg**	**U**	**2**	**U**	**4.2**	**U**	**1.2**	**U**	**0.23**	**U**	**0.22**	**U**
Hexachlorobutadiene	**6**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
Hexachloroethane	**9**	**mg/kg**	**U**	**2.7**	**U**	**5.6**	**U**	**1.5**	**U**	**0.3**	**U**	**0.29**	**U**
Indeno(1,2,3-cd)Pyrene	**7**	**mg/kg**	**U**	**2.7**	**U**	**5.6**	**U**	**1.5**	**U**	**0.3**	**U**	**0.29**	**U**
Isophorone	**-**	**mg/kg**	**U**	**3**	**U**	**6.3**	**U**	**1.7**	**U**	**0.34**	**U**	**0.33**	**U**
Naphthalene	**500**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
Nitrobenzene	**-**	**mg/kg**	**U**	**3**	**U**	**6.3**	**U**	**1.7**	**U**	**0.34**	**U**	**0.33**	**U**
Pentachlorophenol	**10**	**mg/kg**	**U**	**6.7**	**U**	**14**	**U**	**3.8**	**U**	**0.76**	**U**	**0.73**	**U**
Phenanthrene	**500**	**mg/kg**	**U**	**2.6**		**4.2**	**U**	**1.2**	**U**	**0.23**	**U**	**0.22**	**U**
Phenol	**20**	**mg/kg**	**U**	**3.4**	**U**	**7**	**U**	**1.9**	**U**	**0.38**	**U**	**0.36**	**U**
Pyrene	**1000**	**mg/kg**		**4.4**		**5.6**		**1.2**		**0.23**		**0.22**	**U**
U = Below Detection Limits													

Table 2-2
May 2012 Test Pit Data
Liberty Street Parcel

LOCATION				**TP-A 4'**	**TP-B 4'**	**TP-C 4'**	**TP-D 4'**	**TP-E 5'**	**TP-F 4.5'**
SAMPLING DATE				**24-MAY-12**	**24-MAY-12**	**24-MAY-12**	**24-MAY-12**	**24-MAY-12**	**24-MAY-12**
LAB SAMPLE ID				**L1209261-01**	**L1209261-02**	**L1209261-03**	**L1209261-04**	**L1209261-05**	**L1209261-06**
Depth				**4'**	**4'**	**4'**	**4'**	**5'**	**5'**
	S-3/GW-3	**UCL**	**Units**						
MCP Total Metals - Westborough Lab									
Lead, Total	**300**	**3000**	**mg/kg**	**67**	**210**	**400**	**240**	**550**	**380**

Section 3

Data Representativeness Evaluation and Usability Assessment

Pursuant to 310 CMR 40.1056(2)(k) and in accordance with the MassDEP Policy #WSC-07-350 Massachusetts Contingency Plan (MCP) Representativeness Evaluations and Data Usability Assessments Guidance (MassDEP, September 2007), an evaluation of representativeness and an assessment of the data quality have been conducted for the data collected at this site. The Representativeness Evaluation is an evaluation and demonstration of the adequacy of the data sets used to support the conclusions of this Phase II CSA/Class B-2 Partial Response Action Outcome (RAO-P). In evaluating the adequacy of such data, information such as the site's historical use, hydrogeological and physical characteristics, and field observations are considered in addition to the analytical data. The Representativeness Evaluation determines whether the data set in total sufficiently characterizes conditions at the disposal site and supports a coherent Conceptual Site Model (CSM). An Analytical Data Usability Assessment is used to evaluate whether analytical data points are scientifically valid and defensible and of a sufficient level of precision, accuracy and sensitivity to support the RAO. A Data Usability Assessment has both a laboratory analytical component and a field sampling component.

Data were used from previously generated reports prepared by TRC as discussed in Section 2. Data representativeness and usability discussions from previous reports were incorporated into this discussion where appropriate.

3.1 Representativeness Evaluation

The Representativeness Evaluation includes analysis of the CSM; field screening data; data collection approach; number and spatial distribution of sampling locations; handling of samples; temporal distribution of data points; critical samples; completeness; and the inconsistencies and uncertainties. A discussion of the adequacy of these aspects is included in the following subsections.

3.1.1 Conceptual Site Model

The site is a relatively narrow parcel located along and between Liberty Street and a cemetery in New Bedford, Massachusetts. The site is currently owned by the City of New Bedford and operated by the Department of Public Infrastructure (DPI) as a storage area. The proposed future use of the site is for solar panels.

The site is managed under Release Tracking Number (RTN) 4-15685 which consists of multiple properties owned by the City. The RTN has a Special Project Designation by the Massachusetts Department of Environmental Protection (MassDEP).

The compounds of concern for the overall site for RTN 4-15685 are polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs) and metals related to impacted fill material. The data collected within the Liberty Street Parcel indicate that PCBs are not a compound of concern for this portion of the site. The highest concentration of PCBs detected on-site was 3.9 ppm (collected from 1-

3' as part of the URAM data set). All other PCB data were below the S-1/GW-3 standard of 2 ppm. The average PCB concentration at the 1-3' depth using the URAM data set was 1.1 ppm.

The presence of coal/coal ash has been observed in both the TRC borings and the CDM Smith test pits. During the November 2011 test pit program, 2 samples were collected for analysis of coal/coal ash. The data from the suspect coal ash material collected at a depth of approximately 4 feet confirmed the presence of coal ash using microscopy techniques. PAHs were detected below the applicable Method 1 standards.

In the surficial samples collected by CDM Smith, metals were detected below the S-1/GW-3 standards and with the exception of lead, below DEP accepted background concentrations for natural soil. In the Transect B data set (sub-surface samples), lead was detected at concentrations in excess of the S-2/GW-3 standard (300 ppm). All other metals were below the S-2/GW-3 standard. Lead concentrations ranged from 2.5 ppm to 5580 ppm. One sample collected by TRC at location SB-212 contained a concentration of lead of 5580 ppm. The hot spot analysis of this location included averaging the original sample and the duplicate along with the new data collected by CDM Smith in May 2012. Only data above 300 ppm were considered to be part of the hot spot and used in the average. The resulting average concentration of the hot spot was 1333 ppm which is below the lead UCL (3000 ppm).

Groundwater is not a media of concern for the Liberty Street Parcel. The proposed use of this parcel is for solar panels whose installation will not encounter groundwater which is located at approximately 5-7 feet below ground surface.

Historic Fill Material

Based on the data collected at the site and a review of the historic records, the source of impacted soil at the Liberty Street Site is historic urban fill material and no point sources are known to exist at the Liberty Street Parcel. In addition, based on a review of historic records and photographs as described below, it was concluded that filling at the Parker Street Waste Site occurred after placement of the historic urban fill at the Liberty Street Parcel.

A review of the historical records and aerial photographs suggests the following:

- Liberty Street was laid out in a manner to potentially compensate the cemetery for loss of space. An approximately 130 foot wide strip was present between Oak Grove Cemetery and Liberty Street. The layout of Liberty Street was shown on a 1911 historic map.
- The Liberty Street Parcel appears as an area of open land adjacent to a low lying wetland area when New Bedford was surveyed in 1936 to produce the USGS topographic map.
- The Liberty Street Parcel was established as City property and Liberty Street was then constructed. Historic fill soil was present at the base of Liberty Street. Then more and relatively clean fill was added and the space to the east, i.e., the Liberty Street Parcel, eventually was used by the City public works as a storage area. Potentially, as public property, it could also be viewed as part of the public way of Liberty Street. Filling that took place was likely considered suitable for road base.
- Filling of the Parker Street Waste Site occurred post Liberty Street construction and did not likely impact the Liberty Street Parcel.

According to the MassDEP's Technical Update – *Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in Soil*, PAHs are ubiquitous and consistently present in the environment and are typically formed during the incomplete burning of organic material including wood, coal, oil, gasoline and garbage. PAHs are also found in crude oil, coal tar, creosote and asphalt. Historically, PAHs have been associated with human activities such as cooking, heating homes and industries and fuel for operating automobiles, although low levels of PAHs are also present in the environment from natural sources, such as forest fires. Their presence in the environment at higher concentrations is an artifact of habitation and is due to the widespread practice of emptying fireplaces, stoves, boilers, garbage, etc. in rural and urban areas over the past several hundred years. As a result, it is very common to detect "background" levels of PAHs in soils. Metals are both naturally occurring and found in man-made materials (such as paint, fuel, fertilizers and pesticides) widely distributed in the environment. Naturally occurring metals present in wood and coal are often found concentrated in ash residue. The MassDEP has established values for background concentrations for PAHs and metals in soil for "natural" soil and soil containing coal ash or wood ash associated with fill material.

The historic fill material was observed in the subsurface material by CDM Smith and TRC, during previous site investigations, and described as soil with debris including brick, cinders, glass and clinkers along with a layer of ash material with combusted and uncombusted coal and wood fragments. Two samples were analyzed for the presence of coal/coal ash and confirmed the presence of coal ash using microscopy techniques. Therefore, as part of the risk characterization for comparison to background concentrations, the MassDEP published values for historic fill material containing ash were used.

A relatively low percentage (11%) of soil samples collected for metals analysis at the Liberty Street Parcel exceeded the published urban fill background levels. In addition, the maximum values in the Liberty Street Parcel data set when considered as a whole were not significantly higher than those for historic urban fill. All PAH data was below the published values for historic fill material containing ash.

A review of data collected to date indicates the historic fill compounds at the Liberty Street Parcel are mainly related to coal/coal ash and clinkers. A review of the data as well as historical records signifies that the ash and urban fill identified at the Liberty Street Parcel is unrelated to the Parker Street Waste Site. This conclusion is consistent with earlier investigations supporting the Parker Street Waste Site boundaries to be Liberty Street to the east and Parker Street to the south.

3.1.2 Sample Rationale

The purpose of the sample program was to characterize the nature and extent of the concentrations in fill material within the Liberty Street parcel. Thus, sampling locations and depths were selected appropriately to meet this objective.

The following summarizes the three previous sampling rounds conducted by TRC.

- The Transect B data set consisted of 21 samples (plus 2 duplicate samples) from 11 boring locations collected at depths ranging from 4 feet to 11 feet. All samples were analyzed for PCBs. Seven samples were also analyzed for PAHs and metals.
- The URAM data set consisted of 15 samples from 5 locations collected from 0-1', 1-3', 3.5-4.5'. Samples were analyzed for PCBs.

- The Spill data set consisted of 5 samples from 5 locations collected from the top 1 foot. Samples were analyzed for VOCs, EPH carbon ranges and PAHs.

These three additional data sets were considered generally sufficient to characterize the subsurface material. CDM Smith identified the following data gaps: the surficial soil across the site and the extent of the material exceeding the UCL for lead at location SB-212.

CDM Smith collected 11 soil samples within the top 3 feet of material in order to evaluate the exposure to surficial soil. Samples were analyzed for SVOCs and metals. In order to define the extent of material associated with UCL exceedance for lead (SB-212), 5 additional samples were collected and analyzed for lead.

3.1.3 Handling of Samples and the Number and Spatial Distribution

Proper sample collection, handling, and preservation techniques were executed in the field by TRC and CDM Smith. Samples collected by TRC were submitted for laboratory analysis and transported under chain-of-custody to Con-Test Analytical Laboratory (Contest) of East Longmeadow, MA and Groundwater Analytical of Framingham, MA. Samples collected by CDM Smith were submitted for laboratory analysis and transported under chain-of-custody to Alpha Analytical of Westborough, MA.

As discussed above, 43 samples were collected by TRC and 17 additional samples were collected by CDM Smith for a total of 60 samples. The number and spatial distribution of sampling locations is appropriate to define the nature and extent of the compounds of concern, i.e., metals, PAHs and PCBs in fill material.

3.1.4 Temporal Distribution of Samples

Temporal distribution of soil sample collection is not critical for soil due to the stable nature and chemical properties of the primary compound of concern in this medium at this site, i.e., metals, PAHs and PCBs in soil.

3.1.5 Critical Samples

Critical samples are those necessary to support site closure. At this site, the critical samples are those that are used in the Method 1 Risk Characterization presented in Section 4 of this report.

3.1.6 Completeness

Soil samples were collected to determine the nature and extent of compounds of concern related to the historic fill at the site, i.e., PCB, PAHs and metals. As discussed above, 60 samples were collected. There are no data gaps at the site.

3.1.7 Inconsistency and Uncertainty

None of the data was inconsistent with the conceptual site model of historically impacted fill material. One data point (collected by TRC in 2008) exceeded the UCL for lead and the duplicate of this sample was below the UCL. The relative percent difference (RPD) of these two data points (5580 ppm and 2420 ppm) is 79% which exceeds the generally acceptable RPD of 50% in soil. In addition, during the May 2012 test pitting program CDM Smith attempted to re-sample this location and obtained a lead result of 67 ppm with the highest nearby concentration of 550 ppm. Therefore it appears that the lead result of 5580 ppm is an anomaly due to inconsistencies with urban fill material and is not representative of the overall site conditions. Data greater than 300 ppm was considered to be within the lead "hot spot" and used to determine an average concentration representative of this area. The

average concentration for this area was calculated to be 1333 ppm. The uncertainty associated with these data, which is considered to be biased high, does not impact the outcome of this RAO.

3.1.8 Information Considered Unrepresentative

None of the data collected on the Liberty Street Parcel was considered unrepresentative or inconsistent with the conceptual site model. As discussed above one data point (SB-212) was high for lead and could not be replicated with subsequent sampling however, in order to be conservative in the representation of the fill material, this data was included in the risk evaluation.

3.2 Data Usability Assessment

3.2.1 Analytical Data Usability Assessment

Soil data analyzed after August 1, 2003 should be able to be considered Compendium of Analytical Methods (CAM) data and meet the prescribed usability requirements of MassDEP (MassDEP, 2007). CAM is a MassDEP publication that provides (a) information and guidance to all parties on analytical and data quality issues, and (b) requirements and specifications for those parties who wish to obtain "Presumptive Certainty" for satisfying the data quality requirements of the MCP at 310 CMR 40.0017 and 310 CMR 40.0191(2)(c).

Data included to support the RAO were collected by TRC and CDM Smith between June 2008 and May 2012. Samples were collected and analyzed in accordance with the current MassDEP CAM. All samples were submitted for laboratory analysis and transported under chain-of-custody to Con-Test Analytical Laboratory (Contest) of East Longmeadow, MA; Groundwater Analytical of Framingham, MA; or Alpha Analytical of Westborough, MA. Samples were analyzed using CAM Methods. **Appendix D** contains the available lab packages which include the applicable laboratory narratives. The data used to support this RAO is considered to have met the Presumptive Certainty requirements.

TRC conducted data usability on their 3 data sets, i.e., Transect B data, URAM data and drum spill data. Their assessments conclude that the analytical data are usable for MCP decisions based on the CAM requirements for acceptable accuracy, precision and sensitivity. In general, the data are valid as reported and may be used for decision-making purposes.

As reported in the laboratory narrative (Appendix D), data collected by CDM Smith and analyzed by Alpha Analytical had some elevated detection limits due to dilutions required by the sample matrix. In addition, some surrogate recoveries were outside of the individual acceptance criteria for certain SVOCs however they were generally within the overall method allowances. The data is considered usable for MCP decisions.

3.2.2 Field Quality Control Data Usability Assessment

The purpose of the field quality control program is to document that the data are of a quality suitable for the intended uses. Proper sampling techniques and procedures, sampling containers, holding times, and handling procedures were employed by TRC and CDM Smith when sampling, as indicated on each available data package's laboratory data report narrative. All samples were noted to be analyzed within the proper holding time.

3.2.3 Rejection of Analytical Data

No data was rejected based on the Data Usability Assessment.

3.3 Conclusions

Data quality objectives established for this project were to provide data of adequate quality and quantity to characterize the site as part of a Phase II CSA and to achieve site closure with a Class B-2 RAO-P. Data were collected as part of the site investigation to define the horizontal and vertical extent of compounds present in urban fill. This objective was met with the sampling that was conducted at the site.

Section 4
Method 1 Risk Characterization

On behalf of the City of New Bedford (the City), CDM Smith has prepared this Method 1 Risk Characterization for a parcel along Liberty Street in New Bedford, Massachusetts defined as the site. The site is a relatively narrow parcel located along Liberty Street. The source of soil impacts is documented herein to be associated with historical fill consisting of coal, coal ash, and slag typical of urbanized locations where historic use of coal was the primary fuel source for heat and power. Although the site impacts are demonstrably unrelated to those at the nearby Parker Street Waste Site it has been managed under RTN 4-15685. This Method 1 Risk Characterization was completed to support the submittal of a Phase II CSA/Class B-2 Partial RAO Statement.

This risk characterization is based on current risk assessment guidance provided by MassDEP in *Guidance for Disposal Site Risk Characterization – In Support of the Massachusetts Contingency Plan* (MCP) (MassDEP, 1995). The risk characterization evaluates:

- soil boring data identified as "Transect B" data collected in June 2008 by TRC along the edge of the property bordering Liberty Street;
- soil data collected in May 2010 that were associated with a URAM completed at the site;
- soil data collected in November and December 2009 following remediation of soil after three 55-gallon drums, one of which was leaking a material that appeared to be asphalt emulsifier, were deposited on the City's property by an unknown party; and
- soil data collected by CDM Smith in November 2011 and May 2012 from test pit field programs, the latter of which was conducted to further evaluate an anomalous concentration of lead identified at boring location SB-212.

These data are employed in this risk characterization to characterize risk to health, public welfare, and the environment. Risks to public safety are evaluated separately in Section 4.7.

4.1 Method 1 Applicability

Three methods for risk characterization, as described in 310 CMR 40.0942, have been developed to provide a range of approaches to risk characterization. Method 1 was developed to streamline the risk characterization process by providing a comparison of site conditions to promulgated conservative standards to evaluate the risk of harm to health, public welfare, and the environment. Method 1 may only be used, however, if impacts are limited to soil and groundwater and there are no compounds detected in the top two feet of soil that bioaccumulate. For Method 2, site-specific fate and transport factors and considerations may be used to modify certain Method 1 Standards. When GW-2 Standards have been exceeded, a multi-level screening program may be used to determine if an impact to indoor air is likely. Modification of groundwater exposure point concentrations (EPCs) also is acceptable using a Method 2 approach if GW-3 Standards have been exceeded. Method 3 quantitatively estimates cancer and non-cancer health risks to determine the need for remedial action or to demonstrate that a condition of No Significant Risk exists or has been achieved at a site.

The Method 1 approach is applicable for this site based on the following criteria (MassDEP, 1995):

1) Impacts are limited to soil; there is no on-site surface water or sediment, no expected impact to groundwater, and no impacts to indoor air, since there are no permanent structures at the site.

2) A Method 1 Soil Standard is available for each compound selected as a compound of concern (COC).

3) The third criterion for a Method 1 to be an applicable method for evaluating risk was intended to be protective of ecological receptors, since they are most susceptible to bioaccumulative compounds. PCBs, which are bioaccumulative, are detected in 22 of 45 samples; however, only one result was above the S-1/GW-3 soil standard of 2 mg/kg. This site is a narrow parcel of land enclosed by a fence with no suitable habitat for ecological receptors, given its small size and location along a busy road. Thus, although PCBs are present in the top two feet of soil at this site, upper trophic level receptors are not expected to be significantly impacted by the presence of PCBs in the surface soil, since exposure is expected to be very limited in frequency and duration and only one result is above the Method 1 Soil Standard.

Thus, a Method 1 risk characterization has been completed for the site.

4.2 Current and Foreseeable Land Use

The site is a relatively narrow parcel located between Liberty Street, a cemetery, Parker Street, and a residential property. The site is currently owned by the City of New Bedford and operated by the DPI and DPF as a storage area. The site is currently undeveloped and unpaved, with exposed soil. The proposed future use of the property is to house solar panels and be surrounded by a fence.

4.3 Soil and Groundwater Classification

The MCP establishes categories of soil and groundwater that should be utilized in selecting the appropriate Method 1 standards for characterizing risk (MassDEP, 2008). In accordance with MassDEP regulations, soil and groundwater categories should be determined as described in 310 CMR 40.0933 and 310 CMR 40.0932, respectively. The three soil categories (S-1, S-2, and S-3) were derived based on the potential for exposure. Factors such as the type of receptor, frequency of use, intensity of use, and the accessibility of soil are considered in soil classification. Category S-1 is associated with the highest potential for exposure and Category S-3 is associated with the lowest potential for exposure. Currently at this site, the surficial soil is unpaved and accessible to adult workers walking around the site at a high frequency but at a low intensity activity or use. Additionally, given the proximity to residential properties, children may be able to access the site. Thus, the surficial soil from zero to three feet below ground surface (bgs) is considered to be Category S-1. The soil located between three and 15 feet bgs is potentially accessible and is, therefore, considered to be Category S-2.

The MCP recognizes three categories of groundwater as identified in 310 CMR 40.0932: GW-1, GW-2, and GW-3. The groundwater categories are associated with three distinct types of exposures including: (1) potential use of groundwater as a drinking water source (GW-1), (2) groundwater as a source of indoor air impacts (GW-2), and (3) groundwater as a source of surface water impacts (GW-3). Groundwater at this site is not considered GW-1, since the site is not located within a Zone II or Zone A of a drinking water supply area, an Interim Wellhead Protection Area (IWPA), or a potentially

productive aquifer (PPA), as shown on **Figure 4-1**. Additionally, there are no private wells located within 500 feet of the site. Groundwater at this site is not considered GW-2 as there are no occupied buildings on-site. All groundwater is classified as GW-3 based upon its potential to eventually discharge to surface water. The nearest water body is the Acushnet River, which is located approximately 1.2 miles to the east of the Site.

4.4 Site Characterization

Soil

The soil analytical data employed in the Method 1 Risk Characterization are described in Section 2. To evaluate soil at the site, the soil data were segregated into two data sets: 1) a surface soil data set that included any soil sample collected from zero to three feet bgs, and 2) a site-wide soil data set, including all soils collected from the surface down to a depth of 15 feet bgs. These data sets were derived to evaluate current exposure to surface soil and potential future exposure to site-wide soil, including deeper soils, if the future use of the site as a location for solar panels leads to exposure by utility or construction workers during installation of the solar panels or maintenance of utilities beneath the surface. The data included in the surface soil data set are provided in **Tables 4-1** (PCBs), **4-2** (metals), and **4-3** (PAH/EPH/SVOC). The data included in the site-wide soil data set are provided in **Tables 4-4** (PCBs), **4-5** (metals), and **4-6** (PAH/EPH/SVOC). The VOC results, which are included in both data sets, are summarized in **Table 4-7**.

For both data sets, when a sample was analyzed for individual xylene isomers, the detected results were summed and presented as total xylenes for purposes of completing a comparison to standards. Several laboratory methods were requested to obtain PAH results. For the surface and sitewide soil data sets, the results from the PAH, EPH, and SVOC analytical methods were combined to identify the number of detected PAH results and the total number of samples included in each data set. No sample was analyzed by multiple methods, so selection of the most appropriate laboratory result was not required.

For both data sets, the maximum detected concentration or lowest detection limit for non-detects between a parent and duplicate sample was used for each analysis with the exception of the "hot spot" evaluation at location SB-212, as discussed below.

A parent and duplicate sample were collected from soil boring SB-212 for metals analysis. The lead results were 2,420 mg/kg and 5,580 mg/kg, respectively. To further evaluate the lead concentration, CDM Smith installed test pits TP-A through TP-F in May 2012 to collect samples for lead analysis. For the comparison of standards, an average lead concentration was calculated between the parent and duplicate. As part of the "hot spot" evaluation, the resultant concentration from SB-212 was then averaged with the test pit sample results with concentrations greater than 300 ppm to determine an average lead concentration for the hot spot. Table 4-5 shows these average lead results. A site-wide lead exposure concentration was then calculated.

Five samples (BTM-1, BTM-2, BTM-3, ESW, and "under stockpile surface") were collected following remediation of soil that was impacted by a release from one of three 55-gallon drums deposited at the site by an unknown party. These samples were submitted for laboratory analysis of EPH ranges and target analytes in November 2009. For each set of analyses, an average concentration was calculated to create one EPC for these samples to avoid over-representing that part of the site, since the area represented by those data points is a relatively small portion of the site.

Groundwater

As described in Section 3.1.1, groundwater is not a media of concern for this site. Therefore, groundwater has not been evaluated further in this Method 1 risk characterization.

4.5 Selection of Compounds of Concern and Identification of Exposure Point Concentrations

In order to identify COCs for soil, the following criteria were used to exclude compounds independently from the list of detected compounds for each data set:

1) Frequency of detection – a compound was eliminated from the risk characterization if detected at a frequency of less than or equal to 10%.

2) Background concentrations – a compound was eliminated from the risk characterization if its maximum detected concentration was below its respective MassDEP background concentration for soil containing coal or wood ash. The background levels for soil are presented in the MassDEP Technical Update *Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in Soil* (MassDEP, 2002).

For the surface soil data set, arsenic, chromium, lead, mercury, and each of the 13 detected PAHs were eliminated as COCs based on the comparison to background. Acenaphthylene was also eliminated based on a low frequency of detection. Thus, the compounds included as COCs for this data set included PCBs, the C_9-C_{18} aliphatic hydrocarbon range, C_{19}-C_{36} aliphatic hydrocarbon range, and the C_{11}-C_{22} aromatic hydrocarbon range, as shown in **Table 4-8**.

For the site-wide soil data set, arsenic, beryllium, cadmium, chromium, and each of the 13 detected PAHs were eliminated as COCs based on a comparison to background. Acenaphthylene also was eliminated based on a low frequency of detection. Therefore, the COCs for the site-wide data set included barium, lead, nickel, silver, vanadium, zinc, mercury, PCBs, the C_9-C_{18} aliphatic hydrocarbon range, C_{19}-C_{36} aliphatic hydrocarbon range, and the C_{11}-C_{22} aromatic hydrocarbon range, as shown in **Table 4-9**.

EPCs are the concentrations of oil or hazardous material in soil that a receptor may contact at a point of exposure. Generally, EPCs are arithmetic mean concentrations, which represent the average concentration that a receptor may contact over a period of exposure. As shown in **Table 4-10**, average concentrations were appropriate for the surface soil data set, as the following criteria were met for each COC in accordance with 310 CMR 40.0926(3)(b)1: (1) the arithmetic average concentration was less than or equal to the applicable standard; (2) seventy-five percent of the data points used in the averaging procedure were equal to or less than the applicable standard; and (3) no data point used in the averaging was ten times greater than the applicable standard. The applicable S-1/GW-3 standard was selected and used in the averaging assessment and one half the reporting limit was used for non-detects in the calculation of average concentrations. It should be noted that only one result was included in the data set for each of the EPH ranges; thus, the detected concentration was used as the EPC for each hydrocarbon range.

As shown in **Table 4-11**, average concentrations were appropriate for the site-wide soil data set, as the following criteria were met for each COC in accordance with 310 CMR 40.0926(3)(b)1: (1) the

arithmetic average concentration was less than or equal to the applicable standard; (2) seventy-five percent of the data points used in the averaging procedure were equal to or less than the applicable standard; and (3) no data point used in the averaging was ten times greater than the applicable standard. The applicable S-2/GW-3 standard was selected and used in the averaging assessment and one half the reporting limit was used for non-detects in the calculation of average concentrations. Only one result was included in the data set for each of the EPH ranges; thus, the detected concentration was used as the EPC for each hydrocarbon range.

A toxicity profile was developed for each COC and is presented in **Appendix E**.

4.6 Comparison to Method 1 Standards

The EPCs for compounds selected as COCs for each data set were compared to the applicable Method 1 Soil Standards. As presented in Table 4-10, the surface soil EPCs were below the applicable S-1/GW-3 Standard, indicating that the surface soil data set, collected from grade to a depth of three feet, has achieved a condition of no significant risk of harm to human health, public welfare, and the environment. Since the EPCs are less than the most stringent S-1 soil standards, the surface soil is considered acceptable for unrestricted future use.

As presented in Table 4-11, the site-wide soil EPCs were below the applicable S-2/GW-3 Standard, indicating that the site-wide soil data set has achieved a condition of no significant risk of harm to human health, public welfare and the environment. However, the EPC for nickel is not less than the most stringent S-1 soil standard of 20 mg/kg, so the site-wide soil is not considered acceptable for unrestricted future use.

4.7 Risk of Harm to Safety

The purpose of evaluating the risk of harm to safety is to identify conditions that have resulted in or may result in the release of compounds that may pose a threat of physical harm or bodily injury to people presently or in the foreseeable future. In accordance with 310 CMR 40.0960 of the MCP, there are no conditions currently at the site that would constitute a risk of harm to public safety, such as the presence of uncontained materials that exhibit the characteristics of corrosivity, reactivity, flammability, or are considered infectious materials. Therefore, in accordance with 310 CMR 40.0960 of the MCP, a level of no significant risk to safety exists at the site.

4.8 Conclusion

The EPCs for COCs in surface soil are below the most stringent Method 1 Soil Standards, indicating a condition of no significant risk of harm to health, public welfare, and the environment exists at the site for current exposure to surface soil. A level of no significant risk exists for safety as well. The EPCs for COCs in site-wide soil are below the applicable S-2/GW-3 soil standards; however, the EPC for nickel is above the most stringent S-1/GW-3 soil standard. Thus, the site is not acceptable for unrestricted future use and an Activity and Use Limitation (AUL) is required to maintain a condition of no significant risk at the site.

4.9 Uncertainty Analysis

For a Method 1 Risk Characterization, possible sources of uncertainty generally relate to the adequacy of field sampling and characterization of the site. When considering impacts to soil, an appropriate number of samples should be collected to be representative of the site. Numerous samples were

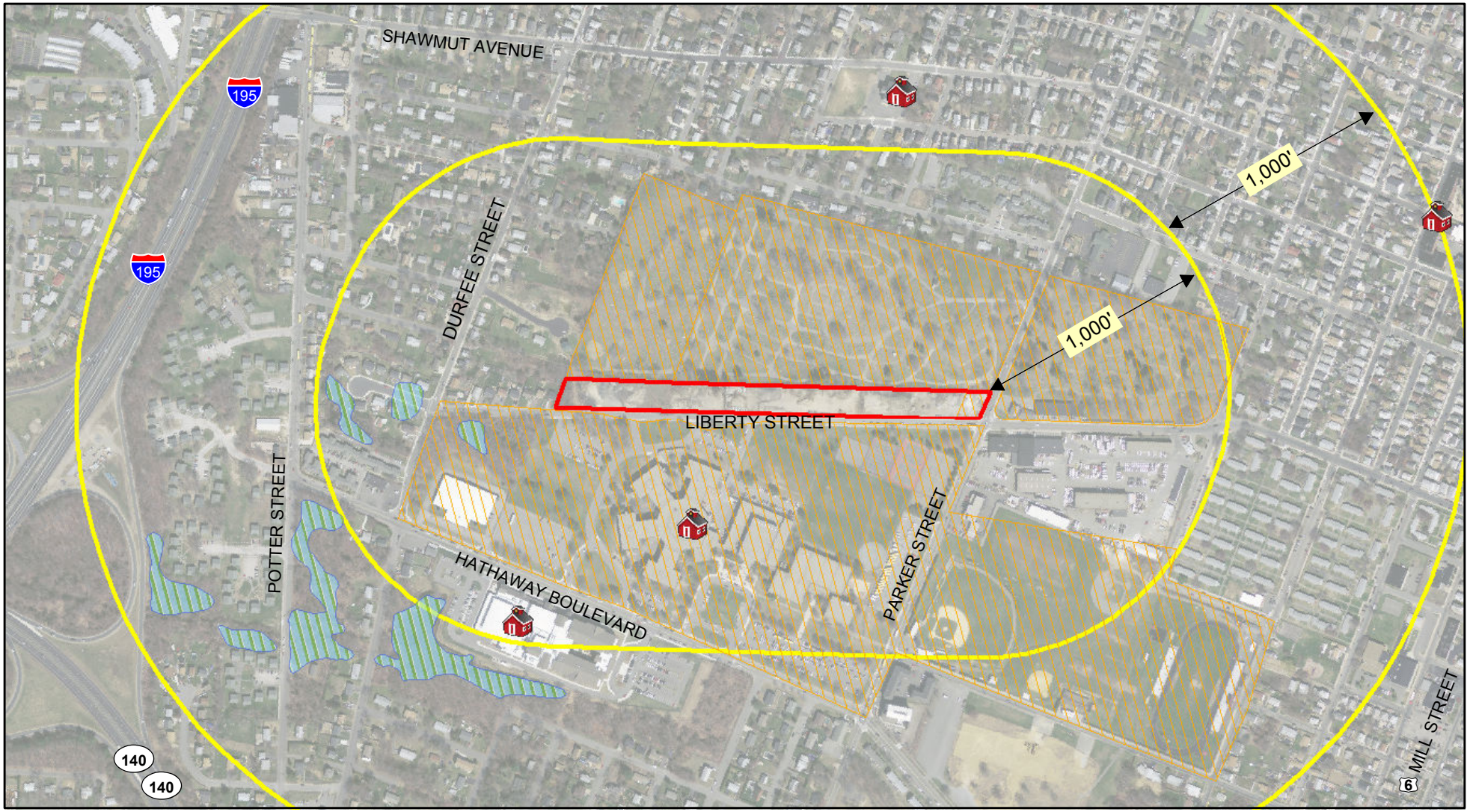
collected during several site investigations conducted between 2008 and 2012 and each sample was submitted for laboratory analyses based on the known source of impacts or to assess initial impacts. Given the small size of the site, known or suspected sources of impacts, the number and distribution of samples, and associated laboratory analyses, the site was adequately characterized spatially and temporally.

4.10 References

MassDEP, 2008. The Massachusetts Contingency Plan - 310 CMR 40.0000. Bureau of Waste Site Cleanup. February.

MassDEP, 2002. Technical Update: *Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in Soil*. Office of Research and Standards. May.

MassDEP, 1995. Guidance for Disposal Site Risk Characterization - in Support of the Massachusetts Contingency Plan. Bureau of Waste Site Cleanup and Office of Research & Standards. July.



Legend

- Dams
- **Colleges and Universities**
  - Private
  - Public
  - Schools (PK - High School)
- Prisons
- NHESP Certified Vernal Pools
- NHESP Natural Communities
- NHESP Priority Habitats of Rare Species
- NHESP Estimated Habitats of Rare Wildlife
- Sole Source Aquifers
- Interim Wellhead Protection Area (IWPA)
- Open Space: Limited Level of Protection
- DEP Approved Zone IIs
- Outstanding Resource Waters
- **Aquifers**
  - High Yield
  - Medium Yield
  - MassDEP 2010 Integrated List of Waters (305(b)/303(d))
  - DEP Wetlands
- ZONE A
- ZONE B
- ZONE C
- 1,000' Buffer
- Liberty Street Parcel

Basemap source: MassGIS

Sensitive Receptors
Liberty Street Parcel
New Bedford, MA

1 inch = 600 feet

0 600 1,200 Feet

Figure 4-1

CDM Smith

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Table 4-1
Summary of PCB Analytical Results Included in the Surface Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	Sample Location:		SB-LSD-1				SB-LSD-2						SB-LSD-3			
		Sample Depth (ft.):		0-1		1-3		0-1		1-3		1-3		0-1		1-3	
		Sample Date:		5/12/2010		5/12/2010		5/12/2010		5/12/2010		5/12/2010		5/12/2010		5/12/2010	
		S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards									Field Dup					
PCBs																	
(mg/kg)	Aroclor 1016	NS	NS	0.0544	U	0.0521	U	0.0569	U	0.0570	U	0.0560	U	0.0551	U	0.0555	U
	Aroclor 1221	NS	NS	0.0544	U	0.0521	U	0.0569	U	0.0570	U	0.0560	U	0.0551	U	0.0555	U
	Aroclor 1232	NS	NS	0.0544	U	0.0521	U	0.0569	U	0.0570	U	0.0560	U	0.0551	U	0.0555	U
	Aroclor 1242	NS	NS	0.0544	U	0.0521	U	0.0569	U	0.0570	U	0.0560	U	0.0551	U	0.0555	U
	Aroclor 1248	NS	NS	0.0544	U	0.0521	U	0.0569	U	0.0570	U	0.0560	U	0.0551	U	0.0555	U
	Aroclor 1254	NS	NS	0.0685	J	0.0521	U	0.131	J	0.510	J	0.478	J	0.0615	J	0.0555	U
	Aroclor 1260	NS	NS	0.0544	U	0.0521	U	0.0569	U	0.221	J	0.210	J	0.0551	U	0.0607	J
	Total PCBs	2	3	0.0685	J	0.0521	U	0.131	J	0.731	J	0.688	J	0.0615	J	0.0607	J
PCB Homologs																	
(mg/kg)	Monochlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Dichlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Trichlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Tetrachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Pentachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Hexachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Heptachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Octachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Nonachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Decachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Total PCBs	2	3	NA		NA		NA		NA		NA		NA		NA	

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)

J - Estimated value

U - Compound was not detected at specified quantitation limit

NA - Not analyzed

NS - No Method 1 soil standard

Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards

Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3

PCBs - Polychlorinated Biphenyls

Total PCBs is the sum of the detected concentrations or the highest reporting limit for non-detects

The surface soil data set includes samples collected from 0 to 3 feet below ground surface (bgs)

The maximum detected concentration between a parent and duplicate was used to represent that sample.

Table 4-1
Summary of PCB Analytical Results Included in the Surface Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	Sample Location:	S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards	SB-LSD-4				SB-LSD-5				SB-LSD-6			
		Sample Depth (ft.):			0-1		1-3		0-1		1-3		0-1		1-3	
		Sample Date:			5/12/2010		5/12/2010		5/12/2010		5/12/2010		5/12/2010		5/12/2010	
PCBs																
(mg/kg)	Aroclor 1016		NS	NS	0.0559	U	0.0564	U	0.0588	U	0.0540	U	0.0540	U	0.0623	U
	Aroclor 1221		NS	NS	0.0559	U	0.0564	U	0.0588	U	0.0540	U	0.0540	U	0.0623	U
	Aroclor 1232		NS	NS	0.0559	U	0.0564	U	0.0588	U	0.0540	U	0.0540	U	0.0623	U
	Aroclor 1242		NS	NS	0.0559	U	0.0564	U	0.0588	U	0.0540	U	0.0540	U	0.0623	U
	Aroclor 1248		NS	NS	0.0559	U	0.0564	U	0.0588	U	0.0540	U	0.0540	U	0.0623	U
	Aroclor 1254		NS	NS	0.0759	J	0.163	J	0.458	J	3.01	J	0.117	J	0.277	J
	Aroclor 1260		NS	NS	0.0559	U	0.109	J	0.252	J	0.908	J	0.096	J	0.146	J
	Total PCBs		2	3	0.0759	J	0.272	J	0.710	J	**3.918**	**J**	0.213	J	0.423	J
PCB Homologs																
(mg/kg)	Monochlorobiphenyl		NS	NS	NA		NA		NA		NA		NA		NA	
	Dichlorobiphenyl		NS	NS	NA		NA		NA		NA		NA		NA	
	Trichlorobiphenyl		NS	NS	NA		NA		NA		NA		NA		NA	
	Tetrachlorobiphenyl		NS	NS	NA		NA		NA		NA		NA		NA	
	Pentachlorobiphenyl		NS	NS	NA		NA		NA		NA		NA		NA	
	Hexachlorobiphenyl		NS	NS	NA		NA		NA		NA		NA		NA	
	Heptachlorobiphenyl		NS	NS	NA		NA		NA		NA		NA		NA	
	Octachlorobiphenyl		NS	NS	NA		NA		NA		NA		NA		NA	
	Nonachlorobiphenyl		NS	NS	NA		NA		NA		NA		NA		NA	
	Decachlorobiphenyl		NS	NS	NA		NA		NA		NA		NA		NA	
	Total PCBs		2	3	NA		NA		NA		NA		NA		NA	

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)

J - Estimated value

U - Compound was not detected at specified quantitation limit

NA - Not analyzed

NS - No Method 1 soil standard

Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards

Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3

PCBs - Polychlorinated Biphenyls

Total PCBs is the sum of the detected concentrations or the highest reporting limit for non-detects

The surface soil data set includes samples collected from 0 to 3 feet below ground surface (bgs)

The maximum detected concentration between a parent and duplicate was used to represent that sample.

Table 4-1
Summary of PCB Analytical Results Included in the Surface Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	Sample Location:		SB-LSD-7						SB-LSD-8			
		Sample Depth (ft.):		0-1		1-3		1-3		0-1		1-3	
		Sample Date:		5/12/2010		5/12/2010		5/12/2010		5/12/2010		5/12/2010	
		S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards					Field Dup					
PCBs													
(mg/kg)	Aroclor 1016	NS	NS	0.0610	U	0.0585	U	0.0581	U	0.0563	U	0.0569	U
	Aroclor 1221	NS	NS	0.0610	U	0.0585	U	0.0581	U	0.0563	U	0.0569	U
	Aroclor 1232	NS	NS	0.0610	U	0.0585	U	0.0581	U	0.0563	U	0.0569	U
	Aroclor 1242	NS	NS	0.0610	U	0.0585	U	0.0581	U	0.0563	U	0.0569	U
	Aroclor 1248	NS	NS	0.0610	U	0.0585	U	0.0581	U	0.0563	U	0.0569	U
	Aroclor 1254	NS	NS	0.365	J	0.676	J	0.676	J	0.256	J	0.105	J
	Aroclor 1260	NS	NS	0.129	J	0.243	J	0.221	J	0.102	J	0.0569	U
	Total PCBs	2	3	0.494	J	0.919	J	0.897	J	0.358	J	0.105	J
PCB Homologs													
(mg/kg)	Monochlorobiphenyl	NS	NS	NA		NA		NA		NA		NA	
	Dichlorobiphenyl	NS	NS	NA		NA		NA		NA		NA	
	Trichlorobiphenyl	NS	NS	NA		NA		NA		NA		NA	
	Tetrachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA	
	Pentachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA	
	Hexachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA	
	Heptachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA	
	Octachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA	
	Nonachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA	
	Decachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA	
	Total PCBs	2	3	NA		NA		NA		NA		NA	

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)

J - Estimated value

U - Compound was not detected at specified quantitation limit

NA - Not analyzed

NS - No Method 1 soil standard

Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards

Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3

PCBs - Polychlorinated Biphenyls

Total PCBs is the sum of the detected concentrations or the highest reporting limit for non-detects

The surface soil data set includes samples collected from 0 to 3 feet below ground surface (bgs)

The maximum detected concentration between a parent and duplicate was used to represent that sample.

Table 4-2
Summary of the Metals Analytical Results Included in the Surface Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte		Sample Location:	TP-01		TP-02		TP-03		TP-04		TP-05		TP-06		TP-07	
			Sample Depth (ft.):	0-3		0-3		0-3		0-3		0-3		0-3		0-3	
			Sample Date:	11/9/2011		11/9/2011		11/9/2011		11/9/2011		11/9/2011		11/9/2011		11/9/2011	
		S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards														
Metals																	
(mg/kg)	Antimony	20	30	NA		NA		NA		NA		NA		NA		NA	
	Arsenic	20	20	4.4		4.6		2.1		2		1.6		1.2		1.6	
	Barium	1,000	3,000	NA		NA		NA		NA		NA		NA		NA	
	Beryllium	100	200	NA		NA		NA		NA		NA		NA		NA	
	Cadmium	2	30	0.42	U	0.42	U	0.42	U	0.4	U	0.41	U	0.4	U	0.4	U
	Chromium	30	200	9.7		10		14		10		15		12		12	
	Lead	300	300	190		43		180		47		260		38		47	
	Nickel	20	700	NA		NA		NA		NA		NA		NA		NA	
	Selenium	400	800	NA		NA		NA		NA		NA		NA		NA	
	Silver	100	200	NA		NA		NA		NA		NA		NA		NA	
	Thallium	8	60	NA		NA		NA		NA		NA		NA		NA	
	Vanadium	600	1,000	NA		NA		NA		NA		NA		NA		NA	
	Zinc	2,500	3,000	NA		NA		NA		NA		NA		NA		NA	
	Mercury	20	30	0.18		0.08		0.13		0.12		0.09		0.1	U	0.07	

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)
U - Compound was not detected at specified quantitation limit
NA - Not analyzed
Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards
Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3
The surface soil data set includes samples collected from 0 to 3 feet below ground surface (bgs)

Table 4-2
Summary of the Metals Analytical Results Included in the Surface Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards	Sample Location: TP-08 Sample Depth (ft.): 0-3 Sample Date: 11/9/2011		Sample Location: TP-09 Sample Depth (ft.): 0-3 Sample Date: 11/9/2011		Sample Location: TP-10 Sample Depth (ft.): 0-3 Sample Date: 11/9/2011		Sample Location: TP-11 Sample Depth (ft.): 0-3 Sample Date: 11/9/2011	
Metals											
(mg/kg)	Antimony	20	30	NA		NA		NA		NA	
	Arsenic	20	20	1.6		7.3		1.5		0.72	
	Barium	1,000	3,000	NA		NA		NA		NA	
	Beryllium	100	200	NA		NA		NA		NA	
	Cadmium	2	30	0.41	U	0.47	U	0.45	U	0.44	U
	Chromium	30	200	16		10		11		9.5	
	Lead	300	300	57		240		26		6.3	
	Nickel	20	700	NA		NA		NA		NA	
	Selenium	400	800	NA		NA		NA		NA	
	Silver	100	200	NA		NA		NA		NA	
	Thallium	8	60	NA		NA		NA		NA	
	Vanadium	600	1,000	NA		NA		NA		NA	
	Zinc	2,500	3,000	NA		NA		NA		NA	
	Mercury	20	30	0.12	U	0.15		0.09	U	0.09	U

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)
U - Compound was not detected at specified quantitation limit
NA - Not analyzed
Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards
Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3
The surface soil data set includes samples collected from 0 to 3 feet below ground surface (bgs)

Table 4-3
Summary of EPH, PAH, SVOC Analytical Results Included in the Surface Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards	Sample ID: BTM-1	BTM-2	BTM-3	ESW	Under Stockpile	Average Concentration of BTM, ESW and Under Stockpile Samples
				Sample Depth(ft.): 1	1	0.5	0-1	Surface	
				Sample Date: 11/3/2009	11/3/2009	11/3/2009	11/3/2009	11/3/2009	
EPH									
(mg/kg)	C_9-C_{18} Aliphatic hydrocarbons	1,000	3,000	35 U	36 U	35	35 U	35 U	21
	C_{19}-C_{36} Aliphatic hydrocarbons	3,000	5,000	35 U	73	110	69	280	110
	C_{11}-C_{22} Aromatic hydrocarbons	1,000	3,000	64	52	150	100	280	129
	Naphthalene	500	1,000	0.59 U	0.60 U	0.56 U	0.58 U	0.58 U	0.56 U
	2-Methylnaphthalene	300	500	0.59 U	0.60 U	0.56 U	0.58 U	0.58 U	0.56 U
	Phenanthrene	500	1,000	0.92	0.83	1.9	2.0	1.5	1.4
	Acenaphthene	1,000	3,000	0.59 U	0.60 U	0.56 U	0.58 U	0.58 U	0.56 U
	Acenaphthylene	10	10	0.59 U	0.60 U	0.56 U	0.58 U	0.58 U	0.56 U
	Fluorene	1,000	3,000	0.59 U	0.60 U	0.56 U	0.58 U	0.58 U	0.56 U
	Anthracene	1,000	3,000	0.59 U	0.60 U	0.56 U	0.58 U	0.58 U	0.56 U
	Fluoranthene	1,000	3,000	1.6	1.2	2.7	3.9	2.2	2.3
	Pyrene	1,000	3,000	1.5	1.1	2.2	3.4	2.0	2.0
	Benzo(a)anthracene	7	40	0.60	0.60 U	1.1	1.4	0.95	0.87
	Chrysene	70	400	0.81	0.71	1.4	1.7	1.3	1.2
	Benzo(b)fluoranthene	7	40	0.70	0.63	1.4	1.7	1.1	1.1
	Benzo(k)fluoranthene	70	400	0.65	0.60 U	0.91	1.4	0.77	0.81
	Benzo(a)pyrene	2	4	0.82	0.72	1.3	1.9	1.0	1.1
	Indeno(1,2,3-cd)pyrene	7	40	0.59 U	0.60 U	0.88	1.3	0.58 U	0.61
	Dibenzo(a,h)anthracene	0.7	4	0.59 U	0.60 U	0.56 U	0.58 U	0.58 U	0.56 U
	Benzo(g,h,i)perylene	1,000	3,000	0.65	0.66	0.65	1.6	0.87	0.89
PAHs									
	Naphthalene	500	1,000	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	300	500	NA	NA	NA	NA	NA	NA
	Phenanthrene	500	1,000	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	3,000	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10	10	NA	NA	NA	NA	NA	NA
	Fluorene	1,000	3,000	NA	NA	NA	NA	NA	NA
	Anthracene	1,000	3,000	NA	NA	NA	NA	NA	NA
	Fluoranthene	1,000	3,000	NA	NA	NA	NA	NA	NA
	Pyrene	1,000	3,000	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	7	40	NA	NA	NA	NA	NA	NA
	Chrysene	70	400	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	7	40	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	70	400	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	2	4	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	40	NA	NA	NA	NA	NA	NA
	Dibenzo(a,h)anthracene	0.7	4	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	3,000	NA	NA	NA	NA	NA	NA
SVOCs									
	Naphthalene	500	1,000	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	300	500	NA	NA	NA	NA	NA	NA
	Phenanthrene	500	1,000	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	3,000	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10	10	NA	NA	NA	NA	NA	NA
	Fluorene	1,000	3,000	NA	NA	NA	NA	NA	NA
	Anthracene	1,000	3,000	NA	NA	NA	NA	NA	NA
	Fluoranthene	1,000	3,000	NA	NA	NA	NA	NA	NA
	Pyrene	1,000	3,000	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	7	40	NA	NA	NA	NA	NA	NA
	Chrysene	70	400	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	7	40	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	70	400	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	2	4	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	40	NA	NA	NA	NA	NA	NA
	Dibenzo(a,h)anthracene	0.7	4	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	3,000	NA	NA	NA	NA	NA	NA
	1,2,4-Trichlorobenzene	500	900	NA	NA	NA	NA	NA	NA
	1,2-Dichlorobenzene	300	300	NA	NA	NA	NA	NA	NA
	1,3-Dichlorobenzene	100	500	NA	NA	NA	NA	NA	NA
	1,4-Dichlorobenzene	50	300	NA	NA	NA	NA	NA	NA
	2,4,5-Trichlorophenol	600	600	NA	NA	NA	NA	NA	NA
	2,4,6-Trichlorophenol	20	20	NA	NA	NA	NA	NA	NA
	2,4-Dichlorophenol	40	40	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	500	1,000	NA	NA	NA	NA	NA	NA

Table 4-3
Summary of EPH, PAH, SVOC Analytical Results Included in the Surface Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards	Sample ID: BTM-1 Sample Depth(ft.): 1 Sample Date: 11/3/2009	BTM-2 1 11/3/2009	BTM-3 0.5 11/3/2009	ESW 0-1 11/3/2009	Under Stockpile Surface 11/3/2009	Average Concentration of BTM, ESW and Under Stockpile Samples
	2,4-Dinitrophenol	50	990	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	10	NA	NA	NA	NA	NA	NA
	2,6-Dinitrotoluene	NS	NS	NA	NA	NA	NA	NA	NA
	2-Chloronaphthalene	NS	NS	NA	NA	NA	NA	NA	NA
	2-Chlorophenol	100	300	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NA	NA	NA	NA	NA	NA
	2-Nitrophenol	NS	NS	NA	NA	NA	NA	NA	NA
	3,3'-Dichlorobenzidine	1	10	NA	NA	NA	NA	NA	NA
	3-Methylphenol/4-Methylphenol	NS	NS	NA	NA	NA	NA	NA	NA
	4-Bromophenyl phenyl ether	NS	NS	NA	NA	NA	NA	NA	NA
	4-Chloroaniline	NS	NS	NA	NA	NA	NA	NA	NA
	4-Nitrophenol	NS	NS	NA	NA	NA	NA	NA	NA
	Acetophenone	NS	NS	NA	NA	NA	NA	NA	NA
	Aniline	NS	NS	NA	NA	NA	NA	NA	NA
	Azobenzene	NS	NS	NA	NA	NA	NA	NA	NA
	Bis(2-chloroethoxy)methane	NS	NS	NA	NA	NA	NA	NA	NA
	Bis(2-chloroethyl)ether	0.7	3	NA	NA	NA	NA	NA	NA
	Bis(2-chloroisopropyl)ether	3	50	NA	NA	NA	NA	NA	NA
	Bis(2-Ethylhexyl)phthalate	200	700	NA	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NA	NA	NA	NA	NA	NA
	Di-n-octylphthalate	NS	NS	NA	NA	NA	NA	NA	NA
	Dibenzofuran	NS	NS	NA	NA	NA	NA	NA	NA
	Diethyl phthalate	300	300	NA	NA	NA	NA	NA	NA
	Dimethyl phthalate	600	600	NA	NA	NA	NA	NA	NA
	Hexachlorobenzene	0.7	5	NA	NA	NA	NA	NA	NA
	Hexachlorobutadiene	6	90	NA	NA	NA	NA	NA	NA
	Hexachloroethane	9	100	NA	NA	NA	NA	NA	NA
	Isophorone	NS	NS	NA	NA	NA	NA	NA	NA
	Nitrobenzene	NS	NS	NA	NA	NA	NA	NA	NA
	Pentachlorophenol	10	10	NA	NA	NA	NA	NA	NA
	Phenol	20	20	NA	NA	NA	NA	NA	NA

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)
U - Compound was not detected at specified quantitation limit.
Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards or elevated reporting limits for non-detects
NS - No Method 1 soil standard
EPH - Extractable Petroleum Hydrocarbons
PAH - Polycyclic Aromatic Hydrocarbons
SVOC - Semi-volatile Organic Compounds
Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3
The surface soil data set includes samples collected from 0 to 3 feet below ground surface (bgs)
NA - Not analyzed
The average concentration of the BTM-1, BTM-2, BTM-3, ESW, and Under Stockpile Surface samples or the lowest reporting limit for non-detects were used in the data set to represent these locations.

Table 4-3
Summary of EPH, PAH, SVOC Analytical Results Included in the Surface Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards	Sample ID: TP-01		TP-02		TP-03		TP-04	
				Sample Depth(ft.): 0-3		0-3		0-3		0-3	
				Sample Date: 11/9/2011		11/9/2011		11/9/2011		11/9/2011	
EPH											
(mg/kg)	C_9-C_{18} Aliphatic hydrocarbons	1,000	3,000	NA		NA		NA		NA	
	C_{19}-C_{36} Aliphatic hydrocarbons	3,000	5,000	NA		NA		NA		NA	
	C_{11}-C_{22} Aromatic hydrocarbons	1,000	3,000	NA		NA		NA		NA	
	Naphthalene	500	1,000	NA		NA		NA		NA	
	2-Methylnaphthalene	300	500	NA		NA		NA		NA	
	Phenanthrene	500	1,000	NA		NA		NA		NA	
	Acenaphthene	1,000	3,000	NA		NA		NA		NA	
	Acenaphthylene	10	10	NA		NA		NA		NA	
	Fluorene	1,000	3,000	NA		NA		NA		NA	
	Anthracene	1,000	3,000	NA		NA		NA		NA	
	Fluoranthene	1,000	3,000	NA		NA		NA		NA	
	Pyrene	1,000	3,000	NA		NA		NA		NA	
	Benzo(a)anthracene	7	40	NA		NA		NA		NA	
	Chrysene	70	400	NA		NA		NA		NA	
	Benzo(b)fluoranthene	7	40	NA		NA		NA		NA	
	Benzo(k)fluoranthene	70	400	NA		NA		NA		NA	
	Benzo(a)pyrene	2	4	NA		NA		NA		NA	
	Indeno(1,2,3-cd)pyrene	7	40	NA		NA		NA		NA	
	Dibenzo(a,h)anthracene	0.7	4	NA		NA		NA		NA	
	Benzo(g,h,i)perylene	1,000	3,000	NA		NA		NA		NA	
PAHs											
	Naphthalene	500	1,000	NA		NA		NA		NA	
	2-Methylnaphthalene	300	500	NA		NA		NA		NA	
	Phenanthrene	500	1,000	NA		NA		NA		NA	
	Acenaphthene	1,000	3,000	NA		NA		NA		NA	
	Acenaphthylene	10	10	NA		NA		NA		NA	
	Fluorene	1,000	3,000	NA		NA		NA		NA	
	Anthracene	1,000	3,000	NA		NA		NA		NA	
	Fluoranthene	1,000	3,000	NA		NA		NA		NA	
	Pyrene	1,000	3,000	NA		NA		NA		NA	
	Benzo(a)anthracene	7	40	NA		NA		NA		NA	
	Chrysene	70	400	NA		NA		NA		NA	
	Benzo(b)fluoranthene	7	40	NA		NA		NA		NA	
	Benzo(k)fluoranthene	70	400	NA		NA		NA		NA	
	Benzo(a)pyrene	2	4	NA		NA		NA		NA	
	Indeno(1,2,3-cd)pyrene	7	40	NA		NA		NA		NA	
	Dibenzo(a,h)anthracene	0.7	4	NA		NA		NA		NA	
	Benzo(g,h,i)perylene	1,000	3,000	NA		NA		NA		NA	
SVOCs											
	Naphthalene	500	1,000	1.8	U	0.36	U	1.8	U	0.34	U
	2-Methylnaphthalene	300	500	2.2	U	0.43	U	2.1	U	0.41	U
	Phenanthrene	500	1,000	1.1	U	1.6		2.1		3.6	
	Acenaphthene	1,000	3,000	1.4	U	0.28	U	1.4	U	0.27	U
	Acenaphthylene	10	10	1.4	U	0.32		1.4	U	0.27	U
	Fluorene	1,000	3,000	1.8	U	0.36		1.8	U	0.37	
	Anthracene	1,000	3,000	1.1	U	0.48		1.1	U	0.37	
	Fluoranthene	1,000	3,000	1.4		1.5		2.8		2.5	
	Pyrene	1,000	3,000	1.2		1.7		3		3.1	
	Benzo(a)anthracene	7	40	1.1	U	0.91		1.6		1.4	
	Chrysene	70	400	1.1	U	0.96		1.6		1.4	
	Benzo(b)fluoranthene	7	40	1.1	U	0.58		1.2		1.3	
	Benzo(k)fluoranthene	70	400	1.1	U	0.72		1.2		0.48	
	Benzo(a)pyrene	2	4	1.4	U	0.77		1.4		1.1	
	Indeno(1,2,3-cd)pyrene	7	40	1.4	U	0.4		1.4	U	0.73	
	Dibenzo(a,h)anthracene	0.7	4	**1.1**	**U**	0.21	U	**1.1**	**U**	0.2	U
	Benzo(g,h,i)perylene	1,000	3,000	1.4	U	0.43		1.4	U	0.69	
	1,2,4-Trichlorobenzene	500	900	1.8	U	0.36	U	1.8	U	0.34	U
	1,2-Dichlorobenzene	300	300	1.8	U	0.36	U	1.8	U	0.34	U
	1,3-Dichlorobenzene	100	500	1.8	U	0.36	U	1.8	U	0.34	U
	1,4-Dichlorobenzene	50	300	1.8	U	0.36	U	1.8	U	0.34	U
	2,4,5-Trichlorophenol	600	600	1.8	U	0.36	U	1.8	U	0.34	U
	2,4,6-Trichlorophenol	20	20	1.1	U	0.21	U	1.1	U	0.2	U
	2,4-Dichlorophenol	40	40	1.6	U	0.32	U	1.6	U	0.31	U
	2,4-Dimethylphenol	500	1,000	1.8	U	0.36	U	1.8	U	0.34	U

Table 4-3
Summary of EPH, PAH, SVOC Analytical Results Included in the Surface Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards	Sample ID:	TP-01		TP-02		TP-03		TP-04	
				Sample Depth(ft.):	0-3		0-3		0-3		0-3	
				Sample Date:	11/9/2011		11/9/2011		11/9/2011		11/9/2011	
	2,4-Dinitrophenol	50	990		8.6	U	1.7	U	8.5	U	1.6	U
	2,4-Dinitrotoluene	2	10		1.8	U	0.36	U	1.8	U	0.34	U
	2,6-Dinitrotoluene	NS	NS		1.8	U	0.36	U	1.8	U	0.34	U
	2-Chloronaphthalene	NS	NS		1.8	U	0.36	U	1.8	U	0.34	U
	2-Chlorophenol	100	300		1.8	U	0.36	U	1.8	U	0.34	U
	2-Methylphenol	NS	NS		1.8	U	0.36	U	1.8	U	0.34	U
	2-Nitrophenol	NS	NS		3.9	U	0.77	U	3.8	U	0.74	U
	3,3'-Dichlorobenzidine	1	10		**1.8**	**U**	0.36	U	**1.8**	**U**	0.34	U
	3-Methylphenol/4-Methylphenol	NS	NS		2.6	U	0.51	U	2.6	U	0.49	U
	4-Bromophenyl phenyl ether	NS	NS		1.8	U	0.36	U	1.8	U	0.34	U
	4-Chloroaniline	NS	NS		1.8	U	0.36	U	1.8	U	0.34	U
	4-Nitrophenol	NS	NS		2.5	U	0.5	U	2.5	U	0.48	U
	Acetophenone	NS	NS		1.8	U	0.36	U	1.8	U	0.34	U
	Aniline	NS	NS		2.2	U	0.43	U	2.1	U	0.41	U
	Azobenzene	NS	NS		1.8	U	0.36	U	1.8	U	0.34	U
	Bis(2-chloroethoxy)methane	NS	NS		1.9	U	0.38	U	1.9	U	0.37	U
	Bis(2-chloroethyl)ether	0.7	3		**1.6**	**U**	0.32	U	**1.6**	**U**	0.31	U
	Bis(2-chloroisopropyl)ether	3	50		2.2	U	0.43	U	2.1	U	0.41	U
	Bis(2-Ethylhexyl)phthalate	200	700		1.8	U	0.36	U	1.8	U	0.34	U
	Butyl benzyl phthalate	NS	NS		1.8	U	0.36	U	1.8	U	0.34	U
	Di-n-butylphthalate	NS	NS		1.8	U	0.36	U	1.8	U	0.34	U
	Di-n-octylphthalate	NS	NS		1.8	U	0.36	U	1.8	U	0.34	U
	Dibenzofuran	NS	NS		1.8	U	0.36	U	1.8	U	0.34	U
	Diethyl phthalate	300	300		1.8	U	0.36	U	1.8	U	0.34	U
	Dimethyl phthalate	600	600		1.8	U	0.36	U	1.8	U	0.34	U
	Hexachlorobenzene	0.7	5		**1.1**	**U**	0.21	U	**1.1**	**U**	0.2	U
	Hexachlorobutadiene	6	90		1.8	U	0.36	U	1.8	U	0.34	U
	Hexachloroethane	9	100		1.4	U	0.28	U	1.4	U	0.27	U
	Isophorone	NS	NS		1.6	U	0.32	U	1.6	U	0.31	U
	Nitrobenzene	NS	NS		1.6	U	0.32	U	1.6	U	0.31	U
	Pentachlorophenol	10	10		3.6	U	0.71	U	3.6	U	0.68	U
	Phenol	20	20		1.8	U	0.36	U	1.8	U	0.34	U

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)
U - Compound was not detected at specified quantitation limit.
Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards or elevated reporting limits for non-detects
NS - No Method 1 soil standard
EPH - Extractable Petroleum Hydrocarbons
PAH - Polycyclic Aromatic Hydrocarbons
SVOC - Semi-volatile Organic Compounds
Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3
The surface soil data set includes samples collected from 0 to 3 feet below ground surface (bgs)
NA - Not analyzed
The average concentration of the BTM-1, BTM-2, BTM-3, ESW, and Under Stockpile Surface samples or the lowest reporting limit for non-detects were used in the data set to represent these locations.

Table 4-3
Summary of EPH, PAH, SVOC Analytical Results Included in the Surface Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards	Sample ID: TP-05		TP-06		TP-07		TP-08	
				Sample Depth(ft.): 0-3		0-3		0-3		0-3	
				Sample Date: 11/9/2011		11/9/2011		11/9/2011		11/9/2011	
EPH											
(mg/kg)	C_9-C_{18} Aliphatic hydrocarbons	1,000	3,000	NA		NA		NA		NA	
	C_{19}-C_{36} Aliphatic hydrocarbons	3,000	5,000	NA		NA		NA		NA	
	C_{11}-C_{22} Aromatic hydrocarbons	1,000	3,000	NA		NA		NA		NA	
	Naphthalene	500	1,000	NA		NA		NA		NA	
	2-Methylnaphthalene	300	500	NA		NA		NA		NA	
	Phenanthrene	500	1,000	NA		NA		NA		NA	
	Acenaphthene	1,000	3,000	NA		NA		NA		NA	
	Acenaphthylene	10	10	NA		NA		NA		NA	
	Fluorene	1,000	3,000	NA		NA		NA		NA	
	Anthracene	1,000	3,000	NA		NA		NA		NA	
	Fluoranthene	1,000	3,000	NA		NA		NA		NA	
	Pyrene	1,000	3,000	NA		NA		NA		NA	
	Benzo(a)anthracene	7	40	NA		NA		NA		NA	
	Chrysene	70	400	NA		NA		NA		NA	
	Benzo(b)fluoranthene	7	40	NA		NA		NA		NA	
	Benzo(k)fluoranthene	70	400	NA		NA		NA		NA	
	Benzo(a)pyrene	2	4	NA		NA		NA		NA	
	Indeno(1,2,3-cd)pyrene	7	40	NA		NA		NA		NA	
	Dibenzo(a,h)anthracene	0.7	4	NA		NA		NA		NA	
	Benzo(g,h,i)perylene	1,000	3,000	NA		NA		NA		NA	
PAHs											
	Naphthalene	500	1,000	NA		NA		NA		NA	
	2-Methylnaphthalene	300	500	NA		NA		NA		NA	
	Phenanthrene	500	1,000	NA		NA		NA		NA	
	Acenaphthene	1,000	3,000	NA		NA		NA		NA	
	Acenaphthylene	10	10	NA		NA		NA		NA	
	Fluorene	1,000	3,000	NA		NA		NA		NA	
	Anthracene	1,000	3,000	NA		NA		NA		NA	
	Fluoranthene	1,000	3,000	NA		NA		NA		NA	
	Pyrene	1,000	3,000	NA		NA		NA		NA	
	Benzo(a)anthracene	7	40	NA		NA		NA		NA	
	Chrysene	70	400	NA		NA		NA		NA	
	Benzo(b)fluoranthene	7	40	NA		NA		NA		NA	
	Benzo(k)fluoranthene	70	400	NA		NA		NA		NA	
	Benzo(a)pyrene	2	4	NA		NA		NA		NA	
	Indeno(1,2,3-cd)pyrene	7	40	NA		NA		NA		NA	
	Dibenzo(a,h)anthracene	0.7	4	NA		NA		NA		NA	
	Benzo(g,h,i)perylene	1,000	3,000	NA		NA		NA		NA	
SVOCs											
	Naphthalene	500	1,000	3.3	U	1.6	U	3.4	U	7	U
	2-Methylnaphthalene	300	500	4	U	2	U	4	U	8.4	U
	Phenanthrene	500	1,000	2	U	0.98	U	2.6		4.2	U
	Acenaphthene	1,000	3,000	2.7	U	1.3	U	2.7	U	5.6	U
	Acenaphthylene	10	10	2.7	U	1.3	U	2.7	U	5.6	U
	Fluorene	1,000	3,000	3.3	U	1.6	U	3.4	U	7	U
	Anthracene	1,000	3,000	2	U	0.98	U	2	U	4.2	U
	Fluoranthene	1,000	3,000	2.1		0.98	U	3.5		5.2	
	Pyrene	1,000	3,000	2.2		1		4.4		5.6	
	Benzo(a)anthracene	7	40	2	U	0.98	U	2.4		4.2	U
	Chrysene	70	400	2	U	0.98	U	2.6		4.2	U
	Benzo(b)fluoranthene	7	40	2	U	0.98	U	2	U	4.2	U
	Benzo(k)fluoranthene	70	400	2	U	0.98	U	2	U	4.2	U
	Benzo(a)pyrene	2	4	**2.7**	**U**	1.3	U	**2.7**	**U**	**5.6**	**U**
	Indeno(1,2,3-cd)pyrene	7	40	2.7	U	1.3	U	2.7	U	5.6	U
	Dibenzo(a,h)anthracene	0.7	4	**2**	**U**	**0.98**	**U**	**2**	**U**	**4.2**	**U**
	Benzo(g,h,i)perylene	1,000	3,000	2.7	U	1.3	U	2.7	U	5.6	U
	1,2,4-Trichlorobenzene	500	900	3.3	U	1.6	U	3.4	U	7	U
	1,2-Dichlorobenzene	300	300	3.3	U	1.6	U	3.4	U	7	U
	1,3-Dichlorobenzene	100	500	3.3	U	1.6	U	3.4	U	7	U
	1,4-Dichlorobenzene	50	300	3.3	U	1.6	U	3.4	U	7	U
	2,4,5-Trichlorophenol	600	600	3.3	U	1.6	U	3.4	U	7	U
	2,4,6-Trichlorophenol	20	20	2	U	0.98	U	2	U	4.2	U
	2,4-Dichlorophenol	40	40	3	U	1.5	U	3	U	6.3	U
	2,4-Dimethylphenol	500	1,000	3.3	U	1.6	U	3.4	U	7	U

Table 4-3
Summary of EPH, PAH, SVOC Analytical Results Included in the Surface Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte		Sample ID:	TP-05		TP-06		TP-07		TP-08	
			Sample Depth(ft.):	0-3		0-3		0-3		0-3	
			Sample Date:	11/9/2011		11/9/2011		11/9/2011		11/9/2011	
		S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards								
	2,4-Dinitrophenol	50	990	16	U	7.8	U	16	U	33	U
	2,4-Dinitrotoluene	2	10	**3.3**	**U**	1.6	U	**3.4**	**U**	**7**	**U**
	2,6-Dinitrotoluene	NS	NS	3.3	U	1.6	U	3.4	U	7	U
	2-Chloronaphthalene	NS	NS	3.3	U	1.6	U	3.4	U	7	U
	2-Chlorophenol	100	300	3.3	U	1.6	U	3.4	U	7	U
	2-Methylphenol	NS	NS	3.3	U	1.6	U	3.4	U	7	U
	2-Nitrophenol	NS	NS	7.2	U	3.5	U	7.2	U	15	U
	3,3'-Dichlorobenzidine	1	10	**3.3**	**U**	**1.6**	**U**	**3.4**	**U**	**7**	**U**
	3-Methylphenol/4-Methylphenol	NS	NS	4.8	U	2.4	U	4.8	U	10	U
	4-Bromophenyl phenyl ether	NS	NS	3.3	U	1.6	U	3.4	U	7	U
	4-Chloroaniline	NS	NS	3.3	U	1.6	U	3.4	U	7	U
	4-Nitrophenol	NS	NS	4.7	U	2.3	U	4.7	U	9.7	U
	Acetophenone	NS	NS	3.3	U	1.6	U	3.4	U	7	U
	Aniline	NS	NS	4	U	2	U	4	U	8.4	U
	Azobenzene	NS	NS	3.3	U	1.6	U	3.4	U	7	U
	Bis(2-chloroethoxy)methane	NS	NS	3.6	U	1.8	U	3.6	U	7.5	U
	Bis(2-chloroethyl)ether	0.7	3	**3**	**U**	**1.5**	**U**	**3**	**U**	**6.3**	**U**
	Bis(2-chloroisopropyl)ether	3	50	**4**	**U**	2	U	**4**	**U**	**8.4**	**U**
	Bis(2-Ethylhexyl)phthalate	200	700	3.3	U	1.6	U	3.4	U	7	U
	Butyl benzyl phthalate	NS	NS	3.3	U	1.6	U	3.4	U	7	U
	Di-n-butylphthalate	NS	NS	3.3	U	1.6	U	3.4	U	7	U
	Di-n-octylphthalate	NS	NS	3.3	U	1.6	U	3.4	U	7	U
	Dibenzofuran	NS	NS	3.3	U	1.6	U	3.4	U	7	U
	Diethyl phthalate	300	300	3.3	U	1.6	U	3.4	U	7	U
	Dimethyl phthalate	600	600	3.3	U	1.6	U	3.4	U	7	U
	Hexachlorobenzene	0.7	5	**2**	**U**	**0.98**	**U**	**2**	**U**	**4.2**	**U**
	Hexachlorobutadiene	6	90	3.3	U	1.6	U	3.4	U	**7**	**U**
	Hexachloroethane	9	100	2.7	U	1.3	U	2.7	U	5.6	U
	Isophorone	NS	NS	3	U	1.5	U	3	U	6.3	U
	Nitrobenzene	NS	NS	3	U	1.5	U	3	U	6.3	U
	Pentachlorophenol	10	10	6.7	U	3.3	U	6.7	U	**14**	**U**
	Phenol	20	20	3.3	U	1.6	U	3.4	U	7	U

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)
U - Compound was not detected at specified quantitation limit.
Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards or elevated reporting limits for non-detects
NS - No Method 1 soil standard
EPH - Extractable Petroleum Hydrocarbons
PAH - Polycyclic Aromatic Hydrocarbons
SVOC - Semi-volatile Organic Compounds
Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3
The surface soil data set includes samples collected from 0 to 3 feet below ground surface (bgs)
NA - Not analyzed
The average concentration of the BTM-1, BTM-2, BTM-3, ESW, and Under Stockpile Surface samples or the lowest reporting limit for non-detects were used in the data set to represent these locations.

Table 4-3
Summary of EPH, PAH, SVOC Analytical Results Included in the Surface Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards	Sample ID: TP-09 Sample Depth(ft.): 0-3 Sample Date: 11/9/2011	TP-10 0-3 11/9/2011	TP-11 0-3 11/9/2011
EPH						
(mg/kg)	C_9-C_{18} Aliphatic hydrocarbons	1,000	3,000	NA	NA	NA
	C_{19}-C_{36} Aliphatic hydrocarbons	3,000	5,000	NA	NA	NA
	C_{11}-C_{22} Aromatic hydrocarbons	1,000	3,000	NA	NA	NA
	Naphthalene	500	1,000	NA	NA	NA
	2-Methylnaphthalene	300	500	NA	NA	NA
	Phenanthrene	500	1,000	NA	NA	NA
	Acenaphthene	1,000	3,000	NA	NA	NA
	Acenaphthylene	10	10	NA	NA	NA
	Fluorene	1,000	3,000	NA	NA	NA
	Anthracene	1,000	3,000	NA	NA	NA
	Fluoranthene	1,000	3,000	NA	NA	NA
	Pyrene	1,000	3,000	NA	NA	NA
	Benzo(a)anthracene	7	40	NA	NA	NA
	Chrysene	70	400	NA	NA	NA
	Benzo(b)fluoranthene	7	40	NA	NA	NA
	Benzo(k)fluoranthene	70	400	NA	NA	NA
	Benzo(a)pyrene	2	4	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	40	NA	NA	NA
	Dibenzo(a,h)anthracene	0.7	4	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	3,000	NA	NA	NA
PAHs						
	Naphthalene	500	1,000	NA	NA	NA
	2-Methylnaphthalene	300	500	NA	NA	NA
	Phenanthrene	500	1,000	NA	NA	NA
	Acenaphthene	1,000	3,000	NA	NA	NA
	Acenaphthylene	10	10	NA	NA	NA
	Fluorene	1,000	3,000	NA	NA	NA
	Anthracene	1,000	3,000	NA	NA	NA
	Fluoranthene	1,000	3,000	NA	NA	NA
	Pyrene	1,000	3,000	NA	NA	NA
	Benzo(a)anthracene	7	40	NA	NA	NA
	Chrysene	70	400	NA	NA	NA
	Benzo(b)fluoranthene	7	40	NA	NA	NA
	Benzo(k)fluoranthene	70	400	NA	NA	NA
	Benzo(a)pyrene	2	4	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	40	NA	NA	NA
	Dibenzo(a,h)anthracene	0.7	4	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	3,000	NA	NA	NA
SVOCs						
	Naphthalene	500	1,000	1.9 U	0.38 U	0.36 U
	2-Methylnaphthalene	300	500	2.3 U	0.46 U	0.44 U
	Phenanthrene	500	1,000	1.2 U	0.23 U	0.22 U
	Acenaphthene	1,000	3,000	1.5 U	0.3 U	0.29 U
	Acenaphthylene	10	10	1.5 U	0.3 U	0.29 U
	Fluorene	1,000	3,000	1.9 U	0.38 U	0.36 U
	Anthracene	1,000	3,000	1.2 U	0.23 U	0.22 U
	Fluoranthene	1,000	3,000	1.2	0.23 U	0.22 U
	Pyrene	1,000	3,000	1.2	0.23	0.22 U
	Benzo(a)anthracene	7	40	1.2 U	0.23 U	0.22 U
	Chrysene	70	400	1.2 U	0.23 U	0.22 U
	Benzo(b)fluoranthene	7	40	1.2 U	0.23 U	0.22 U
	Benzo(k)fluoranthene	70	400	1.2 U	0.23 U	0.22 U
	Benzo(a)pyrene	2	4	1.5 U	0.3 U	0.29 U
	Indeno(1,2,3-cd)pyrene	7	40	1.5 U	0.3 U	0.29 U
	Dibenzo(a,h)anthracene	0.7	4	**1.2 U**	0.23 U	0.22 U
	Benzo(g,h,i)perylene	1,000	3,000	1.5 U	0.3 U	0.29 U
	1,2,4-Trichlorobenzene	500	900	1.9 U	0.38 U	0.36 U
	1,2-Dichlorobenzene	300	300	1.9 U	0.38 U	0.36 U
	1,3-Dichlorobenzene	100	500	1.9 U	0.38 U	0.36 U
	1,4-Dichlorobenzene	50	300	1.9 U	0.38 U	0.36 U
	2,4,5-Trichlorophenol	600	600	1.9 U	0.38 U	0.36 U
	2,4,6-Trichlorophenol	20	20	1.2 U	0.23 U	0.22 U
	2,4-Dichlorophenol	40	40	1.7 U	0.34 U	0.33 U
	2,4-Dimethylphenol	500	1,000	1.9 U	0.38 U	0.36 U

Table 4-3
Summary of EPH, PAH, SVOC Analytical Results Included in the Surface Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards	Sample ID: TP-09		Sample ID: TP-10		Sample ID: TP-11	
				Sample Depth(ft.): 0-3		Sample Depth(ft.): 0-3		Sample Depth(ft.): 0-3	
				Sample Date: 11/9/2011		Sample Date: 11/9/2011		Sample Date: 11/9/2011	
	2,4-Dinitrophenol	50	990	9.2	U	1.8	U	1.8	U
	2,4-Dinitrotoluene	2	10	1.9	U	0.38	U	0.36	U
	2,6-Dinitrotoluene	NS	NS	1.9	U	0.38	U	0.36	U
	2-Chloronaphthalene	NS	NS	1.9	U	0.38	U	0.36	U
	2-Chlorophenol	100	300	1.9	U	0.38	U	0.36	U
	2-Methylphenol	NS	NS	1.9	U	0.38	U	0.36	U
	2-Nitrophenol	NS	NS	4.2	U	0.82	U	0.79	U
	3,3'-Dichlorobenzidine	1	10	**1.9**	**U**	0.38	U	0.36	U
	3-Methylphenol/4-Methylphenol	NS	NS	2.8	U	0.55	U	0.53	U
	4-Bromophenyl phenyl ether	NS	NS	1.9	U	0.38	U	0.36	U
	4-Chloroaniline	NS	NS	1.9	U	0.38	U	0.36	U
	4-Nitrophenol	NS	NS	2.7	U	0.53	U	0.51	U
	Acetophenone	NS	NS	1.9	U	0.38	U	0.36	U
	Aniline	NS	NS	2.3	U	0.46	U	0.44	U
	Azobenzene	NS	NS	1.9	U	0.38	U	0.36	U
	Bis(2-chloroethoxy)methane	NS	NS	2.1	U	0.41	U	0.39	U
	Bis(2-chloroethyl)ether	0.7	3	**1.7**	**U**	0.34	U	0.33	U
	Bis(2-chloroisopropyl)ether	3	50	2.3	U	0.46	U	0.44	U
	Bis(2-Ethylhexyl)phthalate	200	700	1.9	U	0.38	U	0.36	U
	Butyl benzyl phthalate	NS	NS	1.9	U	0.38	U	0.36	U
	Di-n-butylphthalate	NS	NS	1.9	U	0.38	U	0.36	U
	Di-n-octylphthalate	NS	NS	1.9	U	0.38	U	0.36	U
	Dibenzofuran	NS	NS	1.9	U	0.38	U	0.36	U
	Diethyl phthalate	300	300	1.9	U	0.38	U	0.36	U
	Dimethyl phthalate	600	600	1.9	U	0.38	U	0.36	U
	Hexachlorobenzene	0.7	5	**1.2**	**U**	0.23	U	0.22	U
	Hexachlorobutadiene	6	90	1.9	U	0.38	U	0.36	U
	Hexachloroethane	9	100	1.5	U	0.3	U	0.29	U
	Isophorone	NS	NS	1.7	U	0.34	U	0.33	U
	Nitrobenzene	NS	NS	1.7	U	0.34	U	0.33	U
	Pentachlorophenol	10	10	3.8	U	0.76	U	0.73	U
	Phenol	20	20	1.9	U	0.38	U	0.36	U

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)

U - Compound was not detected at specified quantitation limit.

Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards or elevated reporting limits for non-detects

NS - No Method 1 soil standard

EPH - Extractable Petroleum Hydrocarbons

PAH - Polycyclic Aromatic Hydrocarbons

SVOC - Semi-volatile Organic Compounds

Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3

The surface soil data set includes samples collected from 0 to 3 feet below ground surface (bgs)

NA - Not analyzed

The average concentration of the BTM-1, BTM-2, BTM-3, ESW, and Under Stockpile Surface samples or the lowest reporting limit for non-detects were used in the data set to represent these locations.

Table 4-4
Summary of the PCB Analytical Results Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	Sample Location:		SB-LSD-1						SB-LSD-2							
		Sample Depth (ft.):		0-1		1-3		3-4		0-1		1-3		1-3		3-4	
		Sample Date:		5/12/2010		5/12/2010		5/12/2010		5/12/2010		5/12/2010		5/12/2010		5/12/2010	
		Method 1 S-1/GW-3 Soil Standards	Method 1 S-2/GW-3 Soil Standards											Field Dup			
PCBs																	
(mg/kg)	Aroclor 1016	NS	NS	0.0544	U	0.0521	U	0.0567	U	0.0569	U	0.0570	U	0.0560	U	0.0563	U
	Aroclor 1221	NS	NS	0.0544	U	0.0521	U	0.0567	U	0.0569	U	0.0570	U	0.0560	U	0.0563	U
	Aroclor 1232	NS	NS	0.0544	U	0.0521	U	0.0567	U	0.0569	U	0.0570	U	0.0560	U	0.0563	U
	Aroclor 1242	NS	NS	0.0544	U	0.0521	U	0.0567	U	0.0569	U	0.0570	U	0.0560	U	0.0563	U
	Aroclor 1248	NS	NS	0.0544	U	0.0521	U	0.0567	U	0.0569	U	0.0570	U	0.0560	U	0.0563	U
	Aroclor 1254	NS	NS	0.0685	J	0.0521	U	0.611	J	0.131	J	0.510	J	0.478	J	0.523	J
	Aroclor 1260	NS	NS	0.0544	U	0.0521	U	0.227	J	0.0569	U	0.221	J	0.210	J	0.215	J
	Total PCBs	2	3	0.0685	J	0.0521	U	0.838	J	0.131	J	0.731	J	0.688	J	0.738	J
PCB Homologs																	
(mg/kg)	Monochlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Dichlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Trichlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Tetrachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Pentachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Hexachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Heptachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Octachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Nonachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Decachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Total PCBs	2	3	NA		NA		NA		NA		NA		NA		NA	

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)

J - Estimated value

U - Compound was not detected at specified quantitation limit

NA - Not analyzed

NS - No Method 1 soil standard

Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards

Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3

PCBs - Polychlorinated Biphenyls

Total PCBs is the sum of the detected concentrations or the highest reporting limit for non-detects

The sitewide soil data set includes samples collected from 0 to 15 feet below ground surface (bgs)

The maximum detected concentration or highest reporting limit for non-detects between a parent and duplicate was used to represent that sample.

Table 4-4
Summary of the PCB Analytical Results Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	Sample Location:	Sample Depth (ft.):	Sample Date:	Method 1 S-1/GW-3 Soil Standards	Method 1 S-2/GW-3 Soil Standards	SB-LSD-3						SB-LSD-4					
							0-1		1-3		4-5		0-1		1-3		3.5-4.5	
							5/12/2010		5/12/2010		5/12/2010		5/12/2010		5/12/2010		5/12/2010	
PCBs																		
(mg/kg)	Aroclor 1016				NS	NS	0.0551	U	0.0555	U	0.0599	U	0.0559	U	0.0564	U	0.0608	U
	Aroclor 1221				NS	NS	0.0551	U	0.0555	U	0.0599	U	0.0559	U	0.0564	U	0.0608	U
	Aroclor 1232				NS	NS	0.0551	U	0.0555	U	0.0599	U	0.0559	U	0.0564	U	0.0608	U
	Aroclor 1242				NS	NS	0.0551	U	0.0555	U	0.0599	U	0.0559	U	0.0564	U	0.0608	U
	Aroclor 1248				NS	NS	0.0551	U	0.0555	U	0.0599	U	0.0559	U	0.0564	U	0.0608	U
	Aroclor 1254				NS	NS	0.0615	J	0.0555	U	0.0599	U	0.0759	J	0.163	J	0.0608	U
	Aroclor 1260				NS	NS	0.0551	U	0.0607	J	0.0599	U	0.0559	U	0.109	J	0.0608	U
	Total PCBs				2	3	0.0615	J	0.0607	J	0.0599	U	0.0759	J	0.272	J	0.0608	U
PCB Homologs																		
(mg/kg)	Monochlorobiphenyl				NS	NS	NA		NA		NA		NA		NA		NA	
	Dichlorobiphenyl				NS	NS	NA		NA		NA		NA		NA		NA	
	Trichlorobiphenyl				NS	NS	NA		NA		NA		NA		NA		NA	
	Tetrachlorobiphenyl				NS	NS	NA		NA		NA		NA		NA		NA	
	Pentachlorobiphenyl				NS	NS	NA		NA		NA		NA		NA		NA	
	Hexachlorobiphenyl				NS	NS	NA		NA		NA		NA		NA		NA	
	Heptachlorobiphenyl				NS	NS	NA		NA		NA		NA		NA		NA	
	Octachlorobiphenyl				NS	NS	NA		NA		NA		NA		NA		NA	
	Nonachlorobiphenyl				NS	NS	NA		NA		NA		NA		NA		NA	
	Decachlorobiphenyl				NS	NS	NA		NA		NA		NA		NA		NA	
	Total PCBs				2	3	NA		NA		NA		NA		NA		NA	

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)

J - Estimated value

U - Compound was not detected at specified quantitation limit

NA - Not analyzed

NS - No Method 1 soil standard

Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards

Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3

PCBs - Polychlorinated Biphenyls

Total PCBs is the sum of the detected concentrations or the highest reporting limit for non-detects

The sitewide soil data set includes samples collected from 0 to 15 feet below ground surface (bgs)

The maximum detected concentration or highest reporting limit for non-detects between a parent and duplicate was used to represent that sample.

Table 4-4
Summary of the PCB Analytical Results Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	Sample Location:	Sample Depth (ft.):	Sample Date:	Method 1 S-1/GW-3 Soil Standards	Method 1 S-2/GW-3 Soil Standards	SB-LSD-5						SB-LSD-6					
							0-1		1-3		3.5-4.5		0-1		1-3		3.5-5	
							5/12/2010		5/12/2010		5/12/2010		5/12/2010		5/12/2010		5/12/2010	
PCBs																		
(mg/kg)	Aroclor 1016				NS	NS	0.0588	U	0.0540	U	0.0517	U	0.0540	U	0.0623	U	0.0582	U
	Aroclor 1221				NS	NS	0.0588	U	0.0540	U	0.0517	U	0.0540	U	0.0623	U	0.0582	U
	Aroclor 1232				NS	NS	0.0588	U	0.0540	U	0.0517	U	0.0540	U	0.0623	U	0.0582	U
	Aroclor 1242				NS	NS	0.0588	U	0.0540	U	0.0517	U	0.0540	U	0.0623	U	0.0582	U
	Aroclor 1248				NS	NS	0.0588	U	0.0540	U	0.0517	U	0.0540	U	0.0623	U	0.0582	U
	Aroclor 1254				NS	NS	0.458	J	3.01	J	0.0645	J	0.117	J	0.277	J	0.0582	U
	Aroclor 1260				NS	NS	0.252	J	0.908	J	0.0517	U	0.096	J	0.146	J	0.0582	U
	Total PCBs				2	3	0.710	J	**3.918**	**J**	0.0645	J	0.213	J	0.423	J	0.0582	U
PCB Homologs																		
(mg/kg)	Monochlorobiphenyl				NS	NS	NA		NA		NA		NA		NA		NA	
	Dichlorobiphenyl				NS	NS	NA		NA		NA		NA		NA		NA	
	Trichlorobiphenyl				NS	NS	NA		NA		NA		NA		NA		NA	
	Tetrachlorobiphenyl				NS	NS	NA		NA		NA		NA		NA		NA	
	Pentachlorobiphenyl				NS	NS	NA		NA		NA		NA		NA		NA	
	Hexachlorobiphenyl				NS	NS	NA		NA		NA		NA		NA		NA	
	Heptachlorobiphenyl				NS	NS	NA		NA		NA		NA		NA		NA	
	Octachlorobiphenyl				NS	NS	NA		NA		NA		NA		NA		NA	
	Nonachlorobiphenyl				NS	NS	NA		NA		NA		NA		NA		NA	
	Decachlorobiphenyl				NS	NS	NA		NA		NA		NA		NA		NA	
	Total PCBs				2	3	NA		NA		NA		NA		NA		NA	

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)

J - Estimated value

U - Compound was not detected at specified quantitation limit

NA - Not analyzed

NS - No Method 1 soil standard

Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards

Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3

PCBs - Polychlorinated Biphenyls

Total PCBs is the sum of the detected concentrations or the highest reporting limit for non-detects

The sitewide soil data set includes samples collected from 0 to 15 feet below ground surface (bgs)

The maximum detected concentration or highest reporting limit for non-detects between a parent and duplicate was used to represent that sample.

Table 4-4
Summary of the PCB Analytical Results Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	Sample Location:		SB-LSD-7								SB-LSD-8					
		Sample Depth (ft.):		0-1		1-3		1-3		3.5-4.5		0-1		1-3		3.5-4.5	
		Sample Date:		5/12/2010		5/12/2010		5/12/2010		5/12/2010		5/12/2010		5/12/2010		5/12/2010	
		Method 1 S-1/GW-3 Soil Standards	Method 1 S-2/GW-3 Soil Standards					Field Dup									
PCBs																	
(mg/kg)	Aroclor 1016	NS	NS	0.0610	U	0.0585	U	0.0581	U	0.0500	U	0.0563	U	0.0569	U	0.0551	U
	Aroclor 1221	NS	NS	0.0610	U	0.0585	U	0.0581	U	0.0500	U	0.0563	U	0.0569	U	0.0551	U
	Aroclor 1232	NS	NS	0.0610	U	0.0585	U	0.0581	U	0.0500	U	0.0563	U	0.0569	U	0.0551	U
	Aroclor 1242	NS	NS	0.0610	U	0.0585	U	0.0581	U	0.0500	U	0.0563	U	0.0569	U	0.0551	U
	Aroclor 1248	NS	NS	0.0610	U	0.0585	U	0.0581	U	0.0500	U	0.0563	U	0.0569	U	0.0551	U
	Aroclor 1254	NS	NS	0.365	J	0.676	J	0.676	J	0.0819	J	0.256	J	0.105	J	0.150	J
	Aroclor 1260	NS	NS	0.129	J	0.243	J	0.221	J	0.0500	U	0.102	J	0.0569	U	0.0944	J
	Total PCBs	2	3	0.494	J	0.919	J	0.897	J	0.0819	J	0.358	J	0.105	J	0.2444	J
PCB Homologs																	
(mg/kg)	Monochlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Dichlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Trichlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Tetrachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Pentachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Hexachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Heptachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Octachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Nonachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Decachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA	
	Total PCBs	2	3	NA		NA		NA		NA		NA		NA		NA	

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)

J - Estimated value

U - Compound was not detected at specified quantitation limit

NA - Not analyzed

NS - No Method 1 soil standard

Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards

Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3

PCBs - Polychlorinated Biphenyls

Total PCBs is the sum of the detected concentrations or the highest reporting limit for non-detects

The sitewide soil data set includes samples collected from 0 to 15 feet below ground surface (bgs)

The maximum detected concentration or highest reporting limit for non-detects between a parent and duplicate was used to represent that sample.

Table 4-4
Summary of the PCB Analytical Results Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	Sample Location:		SB-210				SB-211				SB-212						SB-213			
		Sample Depth (ft.):		5		11		5		11		4		4		10		5		12	
		Sample Date:		6/16/2008		6/16/2008		6/16/2008		6/16/2008		6/16/2008		6/16/2008		6/16/2008		6/17/2008		6/17/2008	
		Method 1 S-1/GW-3 Soil Standards	Method 1 S-2/GW-3 Soil Standards											Field Dup							
PCBs																					
(mg/kg)	Aroclor 1016	NS	NS	0.0591	U	0.0584	U	0.0662	U	0.0545	U	0.0655	U	0.0635	U	0.0541	U	0.0555	U	0.0549	U
	Aroclor 1221	NS	NS	0.0591	U	0.0584	U	0.0662	U	0.0545	U	0.0655	U	0.0635	U	0.0541	U	0.0555	U	0.0549	U
	Aroclor 1232	NS	NS	0.0591	U	0.0584	U	0.0662	U	0.0545	U	0.0655	U	0.0635	U	0.0541	U	0.0555	U	0.0549	U
	Aroclor 1242	NS	NS	0.0591	U	0.0584	U	0.0662	U	0.0545	U	0.0655	U	0.0635	U	0.0541	U	0.0555	U	0.0549	U
	Aroclor 1248	NS	NS	0.0591	U	0.0584	U	0.0662	U	0.0545	U	0.0655	U	0.0635	U	0.0541	U	0.0555	U	0.0549	U
	Aroclor 1254	NS	NS	0.0591	U	0.0584	U	0.0662	U	0.0545	U	0.0655	U	0.0635	U	0.0541	U	0.0555	U	0.0549	U
	Aroclor 1260	NS	NS	0.0591	U	0.0584	U	0.0662	U	0.0545	U	0.0655	U	0.0635	U	0.0541	U	0.0555	U	0.0549	U
	Total PCBs	2	3	0.0591	U	0.0584	U	0.0662	U	0.0545	U	0.0655	U	0.0635	U	0.0541	U	0.0555	U	0.0549	U
PCB Homologs																					
(mg/kg)	Monochlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA		NA		NA	
	Dichlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA		NA		NA	
	Trichlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA		NA		NA	
	Tetrachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA		NA		NA	
	Pentachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA		NA		NA	
	Hexachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA		NA		NA	
	Heptachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA		NA		NA	
	Octachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA		NA		NA	
	Nonachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA		NA		NA	
	Decachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		NA		NA		NA		NA	
	Total PCBs	2	3	NA		NA		NA		NA		NA		NA		NA		NA		NA	

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)

J - Estimated value

U - Compound was not detected at specified quantitation limit

NA - Not analyzed

NS - No Method 1 soil standard

Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards

Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3

PCBs - Polychlorinated Biphenyls

Total PCBs is the sum of the detected concentrations or the highest reporting limit for non-detects

The sitewide soil data set includes samples collected from 0 to 15 feet below ground surface (bgs)

The maximum detected concentration or highest reporting limit for non-detects between a parent and duplicate was used to represent that sample.

Table 4-4
Summary of the PCB Analytical Results Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	Sample Location:		SB-214				SB-215				SB-216		SB-217				SB-218			
		Sample Depth (ft.):		4		10		7.5		9		4		5		11		4.5		10	
		Sample Date:		6/17/2008		6/17/2008		6/17/2008		6/17/2008		6/17/2008		6/17/2008		6/17/2008		6/17/2008		6/17/2008	
		Method 1 S-1/GW-3 Soil Standards	Method 1 S-2/GW-3 Soil Standards																		
PCBs																					
(mg/kg)	Aroclor 1016	NS	NS	0.0604	U	0.131	UJ	0.0611	U	0.138	UJ	0.0525	U	0.0653	U	0.0530	U	0.0581	U	0.0534	U
	Aroclor 1221	NS	NS	0.0604	U	0.131	UJ	0.0611	U	0.138	UJ	0.0525	U	0.0653	U	0.0530	U	0.0581	U	0.0534	U
	Aroclor 1232	NS	NS	0.0604	U	0.131	UJ	0.0611	U	0.138	UJ	0.0525	U	0.0653	U	0.0530	U	0.0581	U	0.0534	U
	Aroclor 1242	NS	NS	0.0604	U	0.131	UJ	0.0611	U	0.138	UJ	0.0525	U	0.0653	U	0.0530	U	0.0581	U	0.0534	U
	Aroclor 1248	NS	NS	0.0604	U	0.131	UJ	0.0611	U	0.138	UJ	0.0525	U	0.0653	U	0.0530	U	0.0581	U	0.0534	U
	Aroclor 1254	NS	NS	0.225	J	0.131	UJ	0.0611	U	0.138	UJ	0.0525	U	0.0653	U	0.0530	U	0.158	J	0.0534	U
	Aroclor 1260	NS	NS	0.0604	U	0.131	UJ	0.0611	U	0.138	UJ	0.0525	U	0.0653	U	0.0530	U	0.0843	J	0.0534	U
	Total PCBs	2	3	0.225	J	0.131	UJ	0.0611	U	0.138	UJ	0.0525	U	0.0653	U	0.0530	U	0.2423	J	0.0534	U
PCB Homologs																					
(mg/kg)	Monochlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		0.017	U	NA		NA		NA	
	Dichlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		0.017	U	NA		NA		NA	
	Trichlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		0.017	U	NA		NA		NA	
	Tetrachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		0.033	U	NA		NA		NA	
	Pentachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		0.033	U	NA		NA		NA	
	Hexachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		0.033	U	NA		NA		NA	
	Heptachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		0.050	U	NA		NA		NA	
	Octachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		0.050	U	NA		NA		NA	
	Nonachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		0.083	U	NA		NA		NA	
	Decachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA		0.083	U	NA		NA		NA	
	Total PCBs	2	3	NA		NA		NA		NA		NA		0.083	U	NA		NA		NA	

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)

J - Estimated value

U - Compound was not detected at specified quantitation limit

NA - Not analyzed

NS - No Method 1 soil standard

Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards

Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3

PCBs - Polychlorinated Biphenyls

Total PCBs is the sum of the detected concentrations or the highest reporting limit for non-detects

The sitewide soil data set includes samples collected from 0 to 15 feet below ground surface (bgs)

The maximum detected concentration or highest reporting limit for non-detects between a parent and duplicate was used to represent that sample.

Table 4-4
Summary of the PCB Analytical Results Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	Sample Location:		SB-219						SB-221			
		Sample Depth (ft.):		4		4		9		5		8.5	
		Sample Date:		6/17/2008		6/17/2008		6/17/2008		6/17/2008		6/17/2008	
		Method 1 S-1/GW-3 Soil Standards	Method 1 S-2/GW-3 Soil Standards			Field Dup							
PCBs													
(mg/kg)	Aroclor 1016	NS	NS	0.0657	U	0.0681	U	0.0537	U	0.0531	U	0.0514	U
	Aroclor 1221	NS	NS	0.0657	U	0.0681	U	0.0537	U	0.0531	U	0.0514	U
	Aroclor 1232	NS	NS	0.0657	U	0.0681	U	0.0537	U	0.0531	U	0.0514	U
	Aroclor 1242	NS	NS	0.0657	U	0.0681	U	0.0537	U	0.0531	U	0.0514	U
	Aroclor 1248	NS	NS	0.0657	U	0.0681	U	0.0537	U	0.0531	U	0.0514	U
	Aroclor 1254	NS	NS	0.0657	U	0.0681	U	0.0537	U	0.0531	U	0.0514	U
	Aroclor 1260	NS	NS	0.0657	U	0.0681	U	0.0537	U	0.0531	U	0.0514	U
	Total PCBs	2	3	0.0657	U	0.0681	U	0.0537	U	0.0531	U	0.0514	U
PCB Homologs													
(mg/kg)	Monochlorobiphenyl	NS	NS	NA		NA		NA		NA		NA	
	Dichlorobiphenyl	NS	NS	NA		NA		NA		NA		NA	
	Trichlorobiphenyl	NS	NS	NA		NA		NA		NA		NA	
	Tetrachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA	
	Pentachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA	
	Hexachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA	
	Heptachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA	
	Octachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA	
	Nonachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA	
	Decachlorobiphenyl	NS	NS	NA		NA		NA		NA		NA	
	Total PCBs	2	3	NA		NA		NA		NA		NA	

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)

J - Estimated value

U - Compound was not detected at specified quantitation limit

NA - Not analyzed

NS - No Method 1 soil standard

Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards

Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3

PCBs - Polychlorinated Biphenyls

Total PCBs is the sum of the detected concentrations or the highest reporting limit for non-detects

The sitewide soil data set includes samples collected from 0 to 15 feet below ground surface (bgs)

The maximum detected concentration or highest reporting limit for non-detects between a parent and duplicate was used to represent that sample.

Table 4-5
Summary of the Metals Analytical Data Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	Method 1 S-1/GW-3 Soil Standards	Method 1 S-2 /GW-3 Soil Standards	SB-210 5 6/16/2008		SB-212 4 6/16/2008		SB-212 4 6/16/2008 Field Dup		Average betweeen the SB-212 parent and duplicate samples for lead; maximum concentration for other chemicals	
Metals											
(mg/kg)	Antimony	20	30	5.53	U	5.23	U	5.33	U	5.23	U
	Arsenic	20	20	12.3		16.9		18.4		18.4	
	Barium	1,000	3,000	260		697		707		707	
	Beryllium	100	200	0.64		0.57		0.66		0.66	
	Cadmium	2	30	0.49		1.96		1.38		1.96	
	Chromium	30	200	16.3		16.0		17.6		17.6	
	Lead	300	300	**510**		**2,420**		**5,580**		**4000**	
	Nickel	20	700	15.8		16.1		18.3		18.3	
	Selenium	400	800	6.91	U	6.53	U	6.66	U	6.53	U
	Silver	100	200	4.13		5.82		4.30		5.82	
	Thallium	8	60	4.15	U	3.92	U	4.00	U	3.92	U
	Vanadium	600	1,000	34.5		27.3		31.4		31.4	
	Zinc	2,500	3,000	371		483		428		483	
	Mercury	20	30	0.154		0.265		2.47		2.47	

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)
DUP - duplicate
U - Compound was not detected at specified quantitation limit
NA - Not analyzed
EPC - Exposure Point Concentration
Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards
Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3
The sitewide soil data set includes samples collected from 0 to 15 feet below ground surface (bgs)
The average concentration between the SB-212 parent and duplicate was calculated for lead. That concentration was then averaged with the results of TP-A through TP-F with concentrations greater than 300 ppm to represent the "hot spot" area.
That average concentration was included in the sitewide data set for EPC calculations. The maximum detected concentration between the parent and duplicate or lowest reporting limit for non-detects was used to represent that sample for all other chemicals.

Table 4-5
Summary of the Metals Analytical Data Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	Method 1 S-1/GW-3 Soil Standards	Method 1 S-2 /GW-3 Soil Standards	TP-A 4' 4' 5/24/2012	TP-B 4' 4' 5/24/2012	TP-C 4' 4' 5/24/2012	TP-D 4' 4' 5/24/2012	TP-E 5' 4' 5/24/2012	TP-F 4.5' 4' 5/24/2012	"Hot Spot" Area Average
Metals										
(mg/kg)	Antimony	20	30	NA	NA	NA	NA	NA	NA	NA
	Arsenic	20	20	NA	NA	NA	NA	NA	NA	NA
	Barium	1,000	3,000	NA	NA	NA	NA	NA	NA	NA
	Beryllium	100	200	NA	NA	NA	NA	NA	NA	NA
	Cadmium	2	30	NA	NA	NA	NA	NA	NA	NA
	Chromium	30	200	NA	NA	NA	NA	NA	NA	NA
	Lead	300	300	67	210	**400**	240	**550**	**380**	**1333**
	Nickel	20	700	NA	NA	NA	NA	NA	NA	NA
	Selenium	400	800	NA	NA	NA	NA	NA	NA	NA
	Silver	100	200	NA	NA	NA	NA	NA	NA	NA
	Thallium	8	60	NA	NA	NA	NA	NA	NA	NA
	Vanadium	600	1,000	NA	NA	NA	NA	NA	NA	NA
	Zinc	2,500	3,000	NA	NA	NA	NA	NA	NA	NA
	Mercury	20	30	NA	NA	NA	NA	NA	NA	NA

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)
DUP - duplicate
U - Compound was not detected at specified quantitation limit
NA - Not analyzed
EPC - Exposure Point Concentration
Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards
Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3
The sitewide soil data set includes samples collected from 0 to 15 feet below ground surface (bgs)
The average concentration between the SB-212 parent and duplicate was calculated for lead. That concentration was then averaged with the results of TP-A through TP-F with concentrations greater than 300 ppm to represent the "hot spot" area.
That average concentration was included in the sitewide data set for EPC calculations. The maximum detected concentration between the parent and duplicate or lowest reporting limit for non-detects was used to represent that sample for all other chemicals.

Table 4-5
Summary of the Metals Analytical Data Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	Method 1 S-1/GW-3 Soil Standards	Method 1 S-2 /GW-3 Soil Standards	SB-214 4 6/17/2008		SB-216 4 6/17/2008		SB-217 5 6/17/2008		SB-219 4 6/17/2008	
Metals											
(mg/kg)	Antimony	20	30	4.89	U	4.45	U	5.50	U	5.45	U
	Arsenic	20	20	7.20		3.51		15.3		17.3	
	Barium	1,000	3,000	211		31.9		513		337	
	Beryllium	100	200	0.36		0.28	U	0.87		0.35	U
	Cadmium	2	30	1.54		0.28	U	1.14		**2.92**	
	Chromium	30	200	11.7		5.27		13.5		**35.9**	
	Lead	300	300	**561**		55.3		**418**		**1,500**	
	Nickel	20	700	**73.6**		3.72		**26.3**		**28.9**	
	Selenium	400	800	6.11	U	5.56	U	6.87	U	6.82	U
	Silver	100	200	3.03		1.23		7.72		12.2	
	Thallium	8	60	3.67	U	3.34	U	4.13	U	4.09	U
	Vanadium	600	1,000	17.6		9.43		23.3		28.5	
	Zinc	2,500	3,000	445		43.6		560		579	
	Mercury	20	30	0.272		0.446		0.111		0.281	

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)
DUP - duplicate
U - Compound was not detected at specified quantitation limit
NA - Not analyzed
EPC - Exposure Point Concentration
Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards
Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3
The sitewide soil data set includes samples collected from 0 to 15 feet below ground surface (bgs)
The average concentration between the SB-212 parent and duplicate was calculated for lead. That concentration was then averaged with the results of TP-A through TP-F with concentrations greater than 300 ppm to represent the "hot spot" area.
That average concentration was included in the sitewide data set for EPC calculations. The maximum detected concentration between the parent and duplicate or lowest reporting limit for non-detects was used to represent that sample for all other chemicals.

Table 4-5
Summary of the Metals Analytical Data Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	Method 1 S-1/GW-3 Soil Standards	Method 1 S-2 /GW-3 Soil Standards	SB-221 5 6/17/2008		TP-01 11/9/2011		TP-02 11/9/2011		TP-03 11/9/2011		TP-04 11/9/2011		TP-05 11/9/2011		TP-06 11/9/2011	
Metals																	
(mg/kg)	Antimony	20	30	4.27	U	NA		NA		NA		NA		NA		NA	
	Arsenic	20	20	2.67	U	4.4		4.6		2.1		2		1.6		1.2	
	Barium	1,000	3,000	27.8		NA		NA		NA		NA		NA		NA	
	Beryllium	100	200	0.27	U	NA		NA		NA		NA		NA		NA	
	Cadmium	2	30	0.27	U	0.42	U	0.42	U	0.42	U	0.4	U	0.41	U	0.4	U
	Chromium	30	200	8.59		9.7		10		14		10		15		12	
	Lead	300	300	2.49		190		43		180		47		260		38	
	Nickel	20	700	4.95		NA		NA		NA		NA		NA		NA	
	Selenium	400	800	5.34	U	NA		NA		NA		NA		NA		NA	
	Silver	100	200	1.11		NA		NA		NA		NA		NA		NA	
	Thallium	8	60	3.20	U	NA		NA		NA		NA		NA		NA	
	Vanadium	600	1,000	12.0		NA		NA		NA		NA		NA		NA	
	Zinc	2,500	3,000	12.3		NA		NA		NA		NA		NA		NA	
	Mercury	20	30	0.014	U	0.18		0.08		0.13		0.12		0.09		0.1	U

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)
DUP - duplicate
U - Compound was not detected at specified quantitation limit
NA - Not analyzed
EPC - Exposure Point Concentration
Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards
Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3
The sitewide soil data set includes samples collected from 0 to 15 feet below ground surface (bgs)
The average concentration between the SB-212 parent and duplicate was calculated for lead. That concentration was then averaged with the results of TP-A through TP-F with concentrations greater than 300 ppm to represent the "hot spot" area.
That average concentration was included in the sitewide data set for EPC calculations. The maximum detected concentration between the parent and duplicate or lowest reporting limit for non-detects was used to represent that sample for all other chemicals.

Table 4-5
Summary of the Metals Analytical Data Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	Method 1 S-1/GW-3 Soil Standards	Method 1 S-2/GW-3 Soil Standards	TP-07 11/9/2011		TP-08 11/9/2011		TP-09 11/9/2011		TP-10 11/9/2011		TP-11 11/9/2011	
Metals													
(mg/kg)	Antimony	20	30	NA		NA		NA		NA		NA	
	Arsenic	20	20	1.6		1.6		7.3		1.5		0.72	
	Barium	1,000	3,000	NA		NA		NA		NA		NA	
	Beryllium	100	200	NA		NA		NA		NA		NA	
	Cadmium	2	30	0.4	U	0.41	U	0.47	U	0.45	U	0.44	U
	Chromium	30	200	12		16		10		11		9.5	
	Lead	300	300	47		57		240		26		6.3	
	Nickel	20	700	NA		NA		NA		NA		NA	
	Selenium	400	800	NA		NA		NA		NA		NA	
	Silver	100	200	NA		NA		NA		NA		NA	
	Thallium	8	60	NA		NA		NA		NA		NA	
	Vanadium	600	1,000	NA		NA		NA		NA		NA	
	Zinc	2,500	3,000	NA		NA		NA		NA		NA	
	Mercury	20	30	0.07		0.12	U	0.15		0.09	U	0.09	U

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)
DUP - duplicate
U - Compound was not detected at specified quantitation limit
NA - Not analyzed
EPC - Exposure Point Concentration
Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards
Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3
The sitewide soil data set includes samples collected from 0 to 15 feet below ground surface (bgs)
The average concentration between the SB-212 parent and duplicate was calculated for lead. That concentration was then averaged with the results of TP-A through TP-F with concentrations greater than 300 ppm to represent the "hot spot" area.
That average concentration was included in the sitewide data set for EPC calculations. The maximum detected concentration between the parent and duplicate or lowest reporting limit for non-detects was used to represent that sample for all other chemicals.

Table 4-6
Summary of EPH, PAH and SVOV Analytical Results Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards	Sample ID: BTM-1		Sample ID: BTM-2		Sample ID: BTM-3		Sample ID: ESW		Sample ID: Under Stockpile		Average Concentration of BTM, ESW and Under Stockpile Samples	
				Sample Depth(ft.): 1		Sample Depth(ft.): 1		Sample Depth(ft.): 0.5		Sample Depth(ft.): 0-1		Sample Depth: Surface			
				Sample Date: 11/3/2009		Sample Date: 11/3/2009		Sample Date: 11/3/2009		Sample Date: 11/3/2009		Sample Date: 11/3/2009			
EPH															
(mg/kg)	C_9-C_{18} Aliphatic hydrocarbons	1,000	3,000	35	U	36	U	35		35	U	35	U	21	
	C_{19}-C_{36} Aliphatic hydrocarbons	3,000	5,000	35	U	73		110		69		280		110	
	C_{11}-C_{22} Aromatic hydrocarbons	1,000	3,000	64		52		150		100		280		129	
	Naphthalene	500	1,000	0.59	U	0.60	U	0.56	U	0.58	U	0.58	U	0.56	U
	2-Methylnaphthalene	300	500	0.59	U	0.60	U	0.56	U	0.58	U	0.58	U	0.56	U
	Phenanthrene	500	1,000	0.92		0.83		1.9		2.0		1.5		1.4	
	Acenaphthene	1,000	3,000	0.59	U	0.60	U	0.56	U	0.58	U	0.58	U	0.56	U
	Acenaphthylene	10	10	0.59	U	0.60	U	0.56	U	0.58	U	0.58	U	0.56	U
	Fluorene	1,000	3,000	0.59	U	0.60	U	0.56	U	0.58	U	0.58	U	0.56	U
	Anthracene	1,000	3,000	0.59	U	0.60	U	0.56	U	0.58	U	0.58	U	0.56	U
	Fluoranthene	1,000	3,000	1.6		1.2		2.7		3.9		2.2		2.3	
	Pyrene	1,000	3,000	1.5		1.1		2.2		3.4		2.0		2.0	
	Benzo(a)anthracene	7	40	0.60		0.60	U	1.1		1.4		0.95		0.87	
	Chrysene	70	400	0.81		0.71		1.4		1.7		1.3		1.2	
	Benzo(b)fluoranthene	7	40	0.70		0.63		1.4		1.7		1.1		1.1	
	Benzo(k)fluoranthene	70	400	0.65		0.60	U	0.91		1.4		0.77		0.81	
	Benzo(a)pyrene	2	4	0.82		0.72		1.3		1.9		1.0		1.1	
	Indeno(1,2,3-cd)pyrene	7	40	0.59	U	0.60	U	0.88		1.3		0.58	U	0.61	
	Dibenzo(a,h)anthracene	0.7	4	0.59	U	0.60	U	0.56	U	0.58	U	0.58	U	0.56	U
	Benzo(g,h,i)perylene	1,000	3,000	0.65		0.66		0.65		1.6		0.87		0.89	
PAHs															
	Naphthalene	500	1,000	NA		NA		NA		NA		NA		NA	
	2-Methylnaphthalene	300	500	NA		NA		NA		NA		NA		NA	
	Phenanthrene	500	1,000	NA		NA		NA		NA		NA		NA	
	Acenaphthene	1,000	3,000	NA		NA		NA		NA		NA		NA	
	Acenaphthylene	10	10	NA		NA		NA		NA		NA		NA	
	Fluorene	1,000	3,000	NA		NA		NA		NA		NA		NA	
	Anthracene	1,000	3,000	NA		NA		NA		NA		NA		NA	
	Fluoranthene	1,000	3,000	NA		NA		NA		NA		NA		NA	
	Pyrene	1,000	3,000	NA		NA		NA		NA		NA		NA	
	Benzo(a)anthracene	7	40	NA		NA		NA		NA		NA		NA	
	Chrysene	70	400	NA		NA		NA		NA		NA		NA	
	Benzo(b)fluoranthene	7	40	NA		NA		NA		NA		NA		NA	
	Benzo(k)fluoranthene	70	400	NA		NA		NA		NA		NA		NA	
	Benzo(a)pyrene	2	4	NA		NA		NA		NA		NA		NA	
	Indeno(1,2,3-cd)pyrene	7	40	NA		NA		NA		NA		NA		NA	
	Dibenzo(a,h)anthracene	0.7	4	NA		NA		NA		NA		NA		NA	
	Benzo(g,h,i)perylene	1,000	3,000	NA		NA		NA		NA		NA		NA	
SVOCs															
	Naphthalene	500	1,000	NA		NA		NA		NA		NA		NA	
	2-Methylnaphthalene	300	500	NA		NA		NA		NA		NA		NA	
	Phenanthrene	500	1,000	NA		NA		NA		NA		NA		NA	
	Acenaphthene	1,000	3,000	NA		NA		NA		NA		NA		NA	
	Acenaphthylene	10	10	NA		NA		NA		NA		NA		NA	
	Fluorene	1,000	3,000	NA		NA		NA		NA		NA		NA	
	Anthracene	1,000	3,000	NA		NA		NA		NA		NA		NA	
	Fluoranthene	1,000	3,000	NA		NA		NA		NA		NA		NA	
	Pyrene	1,000	3,000	NA		NA		NA		NA		NA		NA	
	Benzo(a)anthracene	7	40	NA		NA		NA		NA		NA		NA	
	Chrysene	70	400	NA		NA		NA		NA		NA		NA	
	Benzo(b)fluoranthene	7	40	NA		NA		NA		NA		NA		NA	
	Benzo(k)fluoranthene	70	400	NA		NA		NA		NA		NA		NA	
	Benzo(a)pyrene	2	4	NA		NA		NA		NA		NA		NA	
	Indeno(1,2,3-cd)pyrene	7	40	NA		NA		NA		NA		NA		NA	
	Dibenzo(a,h)anthracene	0.7	4	NA		NA		NA		NA		NA		NA	
	Benzo(g,h,i)perylene	1,000	3,000	NA		NA		NA		NA		NA		NA	
	1,2,4-Trichlorobenzene	500	900	NA		NA		NA		NA		NA		NA	
	1,2-Dichlorobenzene	300	300	NA		NA		NA		NA		NA		NA	
	1,3-Dichlorobenzene	100	500	NA		NA		NA		NA		NA		NA	
	1,4-Dichlorobenzene	50	300	NA		NA		NA		NA		NA		NA	

Table 4-6
Summary of EPH, PAH and SVOV Analytical Results Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis / Analyte	S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards	Sample ID: BTM-1 Sample Depth(ft.): 1 Sample Date: 11/3/2009	BTM-2 1 11/3/2009	BTM-3 0.5 11/3/2009	ESW 0-1 11/3/2009	Under Stockpile Surface 11/3/2009	Average Concentration of BTM, ESW and Under Stockpile Samples
2,4,5-Trichlorophenol	600	600	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	20	20	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	40	40	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	500	1,000	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	50	990	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	2	10	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	NS	NS	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	NS	NS	NA	NA	NA	NA	NA	NA
2-Chlorophenol	100	300	NA	NA	NA	NA	NA	NA
2-Methylphenol	NS	NS	NA	NA	NA	NA	NA	NA
2-Nitrophenol	NS	NS	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	1	10	NA	NA	NA	NA	NA	NA
3-Methylphenol/4-Methylphenol	NS	NS	NA	NA	NA	NA	NA	NA
4-Bromophenyl phenyl ether	NS	NS	NA	NA	NA	NA	NA	NA
4-Chloroaniline	NS	NS	NA	NA	NA	NA	NA	NA
4-Nitrophenol	NS	NS	NA	NA	NA	NA	NA	NA
Acetophenone	NS	NS	NA	NA	NA	NA	NA	NA
Aniline	NS	NS	NA	NA	NA	NA	NA	NA
Azobenzene	NS	NS	NA	NA	NA	NA	NA	NA
Bis(2-chloroethoxy)methane	NS	NS	NA	NA	NA	NA	NA	NA
Bis(2-chloroethyl)ether	0.7	3	NA	NA	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	3	50	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	200	700	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	NS	NS	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	NS	NS	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NS	NS	NA	NA	NA	NA	NA	NA
Dibenzofuran	NS	NS	NA	NA	NA	NA	NA	NA
Diethyl phthalate	300	300	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	600	600	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	0.7	5	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	6	90	NA	NA	NA	NA	NA	NA
Hexachloroethane	9	100	NA	NA	NA	NA	NA	NA
Isophorone	NS	NS	NA	NA	NA	NA	NA	NA
Nitrobenzene	NS	NS	NA	NA	NA	NA	NA	NA
Pentachlorophenol	10	10	NA	NA	NA	NA	NA	NA
Phenol	20	20	NA	NA	NA	NA	NA	NA

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)
U - Compound was not detected at specified quantitation limit.
Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards or elevated reporting limits for non-detects
NS - No Method 1 soil standard
EPH - Extractable Petroleum Hydrocarbons
PAH - Polycyclic Aromatic Hydrocarbons
SVOC - Semi-volatile Organic Compounds
Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3
The sitewide soil data set includes samples collected from 0 to 15 feet below ground surface (bgs)
NA - Not analyzed
The maximum detected concentration between a parent and duplicate or lowest reporting limit for non-detects was used to represent that sample.

Table 4-6
Summary of EPH, PAH and SVOV Analytical Results Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards	Sample ID:	SB-210	SB-212		SB-214	SB-216	SB-217	SB-219
				Sample Depth(ft.):	5	4	4	4	4	5	4
				Sample Date:	6/16/2008	6/16/2008	6/16/2008 Field Dup	6/17/2008	6/17/2008	6/17/2008	6/17/2008
EPH											
(mg/kg)	C_9-C_{18} Aliphatic hydrocarbons	1,000	3,000		NA	NA	NA	NA	NA	NA	NA
	C_{19}-C_{36} Aliphatic hydrocarbons	3,000	5,000		NA	NA	NA	NA	NA	NA	NA
	C_{11}-C_{22} Aromatic hydrocarbons	1,000	3,000		NA	NA	NA	NA	NA	NA	NA
	Naphthalene	500	1,000		NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	300	500		NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	500	1,000		NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	3,000		NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10	10		NA	NA	NA	NA	NA	NA	NA
	Fluorene	1,000	3,000		NA	NA	NA	NA	NA	NA	NA
	Anthracene	1,000	3,000		NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	1,000	3,000		NA	NA	NA	NA	NA	NA	NA
	Pyrene	1,000	3,000		NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	7	40		NA	NA	NA	NA	NA	NA	NA
	Chrysene	70	400		NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	7	40		NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	70	400		NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	2	4		NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	40		NA	NA	NA	NA	NA	NA	NA
	Dibenzo(a,h)anthracene	0.7	4		NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	3,000		NA	NA	NA	NA	NA	NA	NA
PAHs											
	Naphthalene	500	1,000		0.231 U	0.218 U	0.222 U	1.02 U	0.186 U	0.229 U	1.14 U
	2-Methylnaphthalene	300	500		0.231 U	0.218 U	0.222 U	1.02 U	0.186 U	0.229 U	1.14 U
	Phenanthrene	500	1,000		0.231 U	0.326	0.459	4.16	0.799	0.930	1.14 U
	Acenaphthene	1,000	3,000		0.231 U	0.218 U	0.222 U	1.02 U	0.186 U	0.229 U	1.14 U
	Acenaphthylene	10	10		0.231 U	0.218 U	0.222 U	1.02 U	0.186 U	0.229 U	1.14 U
	Fluorene	1,000	3,000		0.231 U	0.218 U	0.222 U	1.02 U	0.186 U	0.229 U	1.14 U
	Anthracene	1,000	3,000		0.231 U	0.218 U	0.222 U	1.23	0.197	0.229 U	1.14 U
	Fluoranthene	1,000	3,000		0.293	0.450	0.810	5.52	1.60	1.05	1.14 U
	Pyrene	1,000	3,000		0.337	0.437	0.599	5.90	1.20	1.11	1.14 U
	Benzo(a)anthracene	7	40		0.231 U	0.284	0.448	3.95	0.643	0.643	1.14 U
	Chrysene	70	400		0.231 U	0.314	0.501	3.97	0.676	0.810	1.14 U
	Benzo(b)fluoranthene	7	40		0.231 U	0.363	0.604	4.25	0.835	0.710	1.14 U
	Benzo(k)fluoranthene	70	400		0.231 U	0.218 U	0.237	1.81	0.339	0.243	1.14 U
	Benzo(a)pyrene	2	4		0.231 U	0.267	0.435	**3.57**	0.698	0.410	1.14 U
	Indeno(1,2,3-cd)pyrene	7	40		0.231 U	0.218 U	0.261	1.97	0.490	0.380	1.14 U
	Dibenzo(a,h)anthracene	0.7	4		0.231 U	0.218 U	0.222 U	**1.02 U**	0.186 U	0.229 U	**1.14 U**
	Benzo(g,h,i)perylene	1,000	3,000		0.231 U	0.218 U	0.222 U	1.49	0.414	0.367	1.14 U
SVOCs											
	Naphthalene	500	1,000		NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	300	500		NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	500	1,000		NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	3,000		NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10	10		NA	NA	NA	NA	NA	NA	NA
	Fluorene	1,000	3,000		NA	NA	NA	NA	NA	NA	NA
	Anthracene	1,000	3,000		NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	1,000	3,000		NA	NA	NA	NA	NA	NA	NA
	Pyrene	1,000	3,000		NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	7	40		NA	NA	NA	NA	NA	NA	NA
	Chrysene	70	400		NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	7	40		NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	70	400		NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	2	4		NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	40		NA	NA	NA	NA	NA	NA	NA
	Dibenzo(a,h)anthracene	0.7	4		NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	3,000		NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trichlorobenzene	500	900		NA	NA	NA	NA	NA	NA	NA
	1,2-Dichlorobenzene	300	300		NA	NA	NA	NA	NA	NA	NA
	1,3-Dichlorobenzene	100	500		NA	NA	NA	NA	NA	NA	NA
	1,4-Dichlorobenzene	50	300		NA	NA	NA	NA	NA	NA	NA

Table 4-6
Summary of EPH, PAH and SVOV Analytical Results Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis / Analyte	S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards	Sample ID:	SB-210	SB-212	SB-212	SB-214	SB-216	SB-217	SB-219
			Sample Depth(ft.):	5	4	4	4	4	5	4
			Sample Date:	6/16/2008	6/16/2008	6/16/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008
						Field Dup				
2,4,5-Trichlorophenol	600	600		NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	20	20		NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	40	40		NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	500	1,000		NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	50	990		NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	2	10		NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	NS	NS		NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	NS	NS		NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	100	300		NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	NS	NS		NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	NS	NS		NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	1	10		NA	NA	NA	NA	NA	NA	NA
3-Methylphenol/4-Methylphenol	NS	NS		NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl phenyl ether	NS	NS		NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	NS	NS		NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	NS	NS		NA	NA	NA	NA	NA	NA	NA
Acetophenone	NS	NS		NA	NA	NA	NA	NA	NA	NA
Aniline	NS	NS		NA	NA	NA	NA	NA	NA	NA
Azobenzene	NS	NS		NA	NA	NA	NA	NA	NA	NA
Bis(2-chloroethoxy)methane	NS	NS		NA	NA	NA	NA	NA	NA	NA
Bis(2-chloroethyl)ether	0.7	3		NA	NA	NA	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	3	50		NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	200	700		NA	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	NS	NS		NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	NS	NS		NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NS	NS		NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	NS	NS		NA	NA	NA	NA	NA	NA	NA
Diethyl phthalate	300	300		NA	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	600	600		NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	0.7	5		NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	6	90		NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	9	100		NA	NA	NA	NA	NA	NA	NA
Isophorone	NS	NS		NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	NS	NS		NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	10	10		NA	NA	NA	NA	NA	NA	NA
Phenol	20	20		NA	NA	NA	NA	NA	NA	NA

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)
U - Compound was not detected at specified quantitation limit.
Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards or elevated reporting limits for non-detects
NS - No Method 1 soil standard
EPH - Extractable Petroleum Hydrocarbons
PAH - Polycyclic Aromatic Hydrocarbons
SVOC - Semi-volatile Organic Compounds
Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3
The sitewide soil data set includes samples collected from 0 to 15 feet below ground surface (bgs)
NA - Not analyzed
The maximum detected concentration between a parent and duplicate or lowest reporting limit for non-detects was used to represent that sample.

Table 4-6
Summary of EPH, PAH and SVOV Analytical Results Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards	Sample ID: SB-221	TP-01	TP-02	TP-03	TP-04
				Sample Depth(ft.): 5	0-3	0-3	0-3	0-3
				Sample Date: 6/17/2008	11/09/11	11/09/11	11/09/11	11/09/11
EPH								
(mg/kg)	C_9-C_{18} Aliphatic hydrocarbons	1,000	3,000	NA	NA	NA	NA	NA
	C_{19}-C_{36} Aliphatic hydrocarbons	3,000	5,000	NA	NA	NA	NA	NA
	C_{11}-C_{22} Aromatic hydrocarbons	1,000	3,000	NA	NA	NA	NA	NA
	Naphthalene	500	1,000	NA	NA	NA	NA	NA
	2-Methylnaphthalene	300	500	NA	NA	NA	NA	NA
	Phenanthrene	500	1,000	NA	NA	NA	NA	NA
	Acenaphthene	1,000	3,000	NA	NA	NA	NA	NA
	Acenaphthylene	10	10	NA	NA	NA	NA	NA
	Fluorene	1,000	3,000	NA	NA	NA	NA	NA
	Anthracene	1,000	3,000	NA	NA	NA	NA	NA
	Fluoranthene	1,000	3,000	NA	NA	NA	NA	NA
	Pyrene	1,000	3,000	NA	NA	NA	NA	NA
	Benzo(a)anthracene	7	40	NA	NA	NA	NA	NA
	Chrysene	70	400	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	7	40	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	70	400	NA	NA	NA	NA	NA
	Benzo(a)pyrene	2	4	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	40	NA	NA	NA	NA	NA
	Dibenzo(a,h)anthracene	0.7	4	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	3,000	NA	NA	NA	NA	NA
PAHs								
	Naphthalene	500	1,000	0.178 U	NA	NA	NA	NA
	2-Methylnaphthalene	300	500	0.178 U	NA	NA	NA	NA
	Phenanthrene	500	1,000	0.178 U	NA	NA	NA	NA
	Acenaphthene	1,000	3,000	0.178 U	NA	NA	NA	NA
	Acenaphthylene	10	10	0.178 U	NA	NA	NA	NA
	Fluorene	1,000	3,000	0.178 U	NA	NA	NA	NA
	Anthracene	1,000	3,000	0.178 U	NA	NA	NA	NA
	Fluoranthene	1,000	3,000	0.178 U	NA	NA	NA	NA
	Pyrene	1,000	3,000	0.178 U	NA	NA	NA	NA
	Benzo(a)anthracene	7	40	0.178 U	NA	NA	NA	NA
	Chrysene	70	400	0.178 U	NA	NA	NA	NA
	Benzo(b)fluoranthene	7	40	0.178 U	NA	NA	NA	NA
	Benzo(k)fluoranthene	70	400	0.178 U	NA	NA	NA	NA
	Benzo(a)pyrene	2	4	0.178 U	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	40	0.178 U	NA	NA	NA	NA
	Dibenzo(a,h)anthracene	0.7	4	0.178 U	NA	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	3,000	0.178 U	NA	NA	NA	NA
SVOCs								
	Naphthalene	500	1,000	NA	1.8 U	0.36 U	1.8 U	0.34 U
	2-Methylnaphthalene	300	500	NA	2.2 U	0.43 U	2.1 U	0.41 U
	Phenanthrene	500	1,000	NA	1.1 U	1.6	2.1	3.6
	Acenaphthene	1,000	3,000	NA	1.4 U	0.28 U	1.4 U	0.27 U
	Acenaphthylene	10	10	NA	1.4 U	0.32	1.4 U	0.27 U
	Fluorene	1,000	3,000	NA	1.8 U	0.36	1.8 U	0.37
	Anthracene	1,000	3,000	NA	1.1 U	0.48	1.1 U	0.37
	Fluoranthene	1,000	3,000	NA	1.4	1.5	2.8	2.5
	Pyrene	1,000	3,000	NA	1.2	1.7	3	3.1
	Benzo(a)anthracene	7	40	NA	1.1 U	0.91	1.6	1.4
	Chrysene	70	400	NA	1.1 U	0.96	1.6	1.4
	Benzo(b)fluoranthene	7	40	NA	1.1 U	0.58	1.2	1.3
	Benzo(k)fluoranthene	70	400	NA	1.1 U	0.72	1.2	0.48
	Benzo(a)pyrene	2	4	NA	1.4 U	0.77	1.4	1.1
	Indeno(1,2,3-cd)pyrene	7	40	NA	1.4 U	0.4	1.4 U	0.73
	Dibenzo(a,h)anthracene	0.7	4	NA	**1.1 U**	0.21 U	**1.1 U**	0.2 U
	Benzo(g,h,i)perylene	1,000	3,000	NA	1.4 U	0.43	1.4 U	0.69
	1,2,4-Trichlorobenzene	500	900	NA	1.8 U	0.36 U	1.8 U	0.34 U
	1,2-Dichlorobenzene	300	300	NA	1.8 U	0.36 U	1.8 U	0.34 U
	1,3-Dichlorobenzene	100	500	NA	1.8 U	0.36 U	1.8 U	0.34 U
	1,4-Dichlorobenzene	50	300	NA	1.8 U	0.36 U	1.8 U	0.34 U

Table 4-6
Summary of EPH, PAH and SVOV Analytical Results Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte		Sample ID:	SB-221	TP-01		TP-02		TP-03		TP-04	
			Sample Depth(ft.):	5	0-3		0-3		0-3		0-3	
			Sample Date:	6/17/2008	11/09/11		11/09/11		11/09/11		11/09/11	
		S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards									
	2,4,5-Trichlorophenol	600	600	NA	1.8	U	0.36	U	1.8	U	0.34	U
	2,4,6-Trichlorophenol	20	20	NA	1.1	U	0.21	U	1.1	U	0.2	U
	2,4-Dichlorophenol	40	40	NA	1.6	U	0.32	U	1.6	U	0.31	U
	2,4-Dimethylphenol	500	1,000	NA	1.8	U	0.36	U	1.8	U	0.34	U
	2,4-Dinitrophenol	50	990	NA	8.6	U	1.7	U	8.5	U	1.6	U
	2,4-Dinitrotoluene	2	10	NA	1.8	U	0.36	U	1.8	U	0.34	U
	2,6-Dinitrotoluene	NS	NS	NA	1.8	U	0.36	U	1.8	U	0.34	U
	2-Chloronaphthalene	NS	NS	NA	1.8	U	0.36	U	1.8	U	0.34	U
	2-Chlorophenol	100	300	NA	1.8	U	0.36	U	1.8	U	0.34	U
	2-Methylphenol	NS	NS	NA	1.8	U	0.36	U	1.8	U	0.34	U
	2-Nitrophenol	NS	NS	NA	3.9	U	0.77	U	3.8	U	0.74	U
	3,3'-Dichlorobenzidine	1	10	NA	**1.8**	**U**	0.36	U	**1.8**	**U**	0.34	U
	3-Methylphenol/4-Methylphenol	NS	NS	NA	2.6	U	0.51	U	2.6	U	0.49	U
	4-Bromophenyl phenyl ether	NS	NS	NA	1.8	U	0.36	U	1.8	U	0.34	U
	4-Chloroaniline	NS	NS	NA	1.8	U	0.36	U	1.8	U	0.34	U
	4-Nitrophenol	NS	NS	NA	2.5	U	0.5	U	2.5	U	0.48	U
	Acetophenone	NS	NS	NA	1.8	U	0.36	U	1.8	U	0.34	U
	Aniline	NS	NS	NA	2.2	U	0.43	U	2.1	U	0.41	U
	Azobenzene	NS	NS	NA	1.8	U	0.36	U	1.8	U	0.34	U
	Bis(2-chloroethoxy)methane	NS	NS	NA	1.9	U	0.38	U	1.9	U	0.37	U
	Bis(2-chloroethyl)ether	0.7	3	NA	**1.6**	**U**	0.32	U	**1.6**	**U**	0.31	U
	Bis(2-chloroisopropyl)ether	3	50	NA	2.2	U	0.43	U	2.1	U	0.41	U
	Bis(2-Ethylhexyl)phthalate	200	700	NA	1.8	U	0.36	U	1.8	U	0.34	U
	Butyl benzyl phthalate	NS	NS	NA	1.8	U	0.36	U	1.8	U	0.34	U
	Di-n-butylphthalate	NS	NS	NA	1.8	U	0.36	U	1.8	U	0.34	U
	Di-n-octylphthalate	NS	NS	NA	1.8	U	0.36	U	1.8	U	0.34	U
	Dibenzofuran	NS	NS	NA	1.8	U	0.36	U	1.8	U	0.34	U
	Diethyl phthalate	300	300	NA	1.8	U	0.36	U	1.8	U	0.34	U
	Dimethyl phthalate	600	600	NA	1.8	U	0.36	U	1.8	U	0.34	U
	Hexachlorobenzene	0.7	5	NA	**1.1**	**U**	0.21	U	**1.1**	**U**	0.2	U
	Hexachlorobutadiene	6	90	NA	1.8	U	0.36	U	1.8	U	0.34	U
	Hexachloroethane	9	100	NA	1.4	U	0.28	U	1.4	U	0.27	U
	Isophorone	NS	NS	NA	1.6	U	0.32	U	1.6	U	0.31	U
	Nitrobenzene	NS	NS	NA	1.6	U	0.32	U	1.6	U	0.31	U
	Pentachlorophenol	10	10	NA	3.6	U	0.71	U	3.6	U	0.68	U
	Phenol	20	20	NA	1.8	U	0.36	U	1.8	U	0.34	U

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)
U - Compound was not detected at specified quantitation limit.
Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards or elevated reporting limits for non-detects
NS - No Method 1 soil standard
EPH - Extractable Petroleum Hydrocarbons
PAH - Polycyclic Aromatic Hydrocarbons
SVOC - Semi-volatile Organic Compounds
Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3
The sitewide soil data set includes samples collected from 0 to 15 feet below ground surface (bgs)
NA - Not analyzed
The maximum detected concentration between a parent and duplicate or lowest reporting limit for non-detects was used to represent that sample.

Table 4-6
Summary of EPH, PAH and SVOV Analytical Results Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards	Sample ID: TP-05 Sample Depth(ft.): 0-3 Sample Date: 11/09/11		Sample ID: TP-06 Sample Depth(ft.): 0-3 Sample Date: 11/09/11		Sample ID: TP-07 Sample Depth(ft.): 0-3 Sample Date: 11/09/11		Sample ID: TP-08 Sample Depth(ft.): 0-3 Sample Date: 11/09/11	
EPH											
(mg/kg)	C_9-C_{18} Aliphatic hydrocarbons	1,000	3,000	NA		NA		NA		NA	
	C_{19}-C_{36} Aliphatic hydrocarbons	3,000	5,000	NA		NA		NA		NA	
	C_{11}-C_{22} Aromatic hydrocarbons	1,000	3,000	NA		NA		NA		NA	
	Naphthalene	500	1,000	NA		NA		NA		NA	
	2-Methylnaphthalene	300	500	NA		NA		NA		NA	
	Phenanthrene	500	1,000	NA		NA		NA		NA	
	Acenaphthene	1,000	3,000	NA		NA		NA		NA	
	Acenaphthylene	10	10	NA		NA		NA		NA	
	Fluorene	1,000	3,000	NA		NA		NA		NA	
	Anthracene	1,000	3,000	NA		NA		NA		NA	
	Fluoranthene	1,000	3,000	NA		NA		NA		NA	
	Pyrene	1,000	3,000	NA		NA		NA		NA	
	Benzo(a)anthracene	7	40	NA		NA		NA		NA	
	Chrysene	70	400	NA		NA		NA		NA	
	Benzo(b)fluoranthene	7	40	NA		NA		NA		NA	
	Benzo(k)fluoranthene	70	400	NA		NA		NA		NA	
	Benzo(a)pyrene	2	4	NA		NA		NA		NA	
	Indeno(1,2,3-cd)pyrene	7	40	NA		NA		NA		NA	
	Dibenzo(a,h)anthracene	0.7	4	NA		NA		NA		NA	
	Benzo(g,h,i)perylene	1,000	3,000	NA		NA		NA		NA	
PAHs											
	Naphthalene	500	1,000	NA		NA		NA		NA	
	2-Methylnaphthalene	300	500	NA		NA		NA		NA	
	Phenanthrene	500	1,000	NA		NA		NA		NA	
	Acenaphthene	1,000	3,000	NA		NA		NA		NA	
	Acenaphthylene	10	10	NA		NA		NA		NA	
	Fluorene	1,000	3,000	NA		NA		NA		NA	
	Anthracene	1,000	3,000	NA		NA		NA		NA	
	Fluoranthene	1,000	3,000	NA		NA		NA		NA	
	Pyrene	1,000	3,000	NA		NA		NA		NA	
	Benzo(a)anthracene	7	40	NA		NA		NA		NA	
	Chrysene	70	400	NA		NA		NA		NA	
	Benzo(b)fluoranthene	7	40	NA		NA		NA		NA	
	Benzo(k)fluoranthene	70	400	NA		NA		NA		NA	
	Benzo(a)pyrene	2	4	NA		NA		NA		NA	
	Indeno(1,2,3-cd)pyrene	7	40	NA		NA		NA		NA	
	Dibenzo(a,h)anthracene	0.7	4	NA		NA		NA		NA	
	Benzo(g,h,i)perylene	1,000	3,000	NA		NA		NA		NA	
SVOCs											
	Naphthalene	500	1,000	3.3	U	1.6	U	3.4	U	7	U
	2-Methylnaphthalene	300	500	4	U	2	U	4	U	8.4	U
	Phenanthrene	500	1,000	2	U	0.98	U	2.6		4.2	U
	Acenaphthene	1,000	3,000	2.7	U	1.3	U	2.7	U	5.6	U
	Acenaphthylene	10	10	2.7	U	1.3	U	2.7	U	5.6	U
	Fluorene	1,000	3,000	3.3	U	1.6	U	3.4	U	7	U
	Anthracene	1,000	3,000	2	U	0.98	U	2	U	4.2	U
	Fluoranthene	1,000	3,000	2.1		0.98	U	3.5		5.2	
	Pyrene	1,000	3,000	2.2		1		4.4		5.6	
	Benzo(a)anthracene	7	40	2	U	0.98	U	2.4		4.2	U
	Chrysene	70	400	2	U	0.98	U	2.6		4.2	U
	Benzo(b)fluoranthene	7	40	2	U	0.98	U	2	U	4.2	U
	Benzo(k)fluoranthene	70	400	2	U	0.98	U	2	U	4.2	U
	Benzo(a)pyrene	2	4	**2.7**	**U**	1.3	U	**2.7**	**U**	**5.6**	**U**
	Indeno(1,2,3-cd)pyrene	7	40	2.7	U	1.3	U	2.7	U	5.6	U
	Dibenzo(a,h)anthracene	0.7	4	**2**	**U**	**0.98**	**U**	**2**	**U**	**4.2**	**U**
	Benzo(g,h,i)perylene	1,000	3,000	2.7	U	1.3	U	2.7	U	5.6	U
	1,2,4-Trichlorobenzene	500	900	3.3	U	1.6	U	3.4	U	7	U
	1,2-Dichlorobenzene	300	300	3.3	U	1.6	U	3.4	U	7	U
	1,3-Dichlorobenzene	100	500	3.3	U	1.6	U	3.4	U	7	U
	1,4-Dichlorobenzene	50	300	3.3	U	1.6	U	3.4	U	7	U

Table 4-6
Summary of EPH, PAH and SVOV Analytical Results Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis / Analyte	S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards	Sample ID: TP-05 Sample Depth(ft.): 0-3 Sample Date: 11/09/11		Sample ID: TP-06 Sample Depth(ft.): 0-3 Sample Date: 11/09/11		Sample ID: TP-07 Sample Depth(ft.): 0-3 Sample Date: 11/09/11		Sample ID: TP-08 Sample Depth(ft.): 0-3 Sample Date: 11/09/11	
2,4,5-Trichlorophenol	600	600	3.3	U	1.6	U	3.4	U	7	U
2,4,6-Trichlorophenol	20	20	2	U	0.98	U	2	U	4.2	U
2,4-Dichlorophenol	40	40	3	U	1.5	U	3	U	6.3	U
2,4-Dimethylphenol	500	1,000	3.3	U	1.6	U	3.4	U	7	U
2,4-Dinitrophenol	50	990	16	U	7.8	U	16	U	33	U
2,4-Dinitrotoluene	2	10	**3.3**	**U**	1.6	U	**3.4**	**U**	**7**	**U**
2,6-Dinitrotoluene	NS	NS	3.3	U	1.6	U	3.4	U	7	U
2-Chloronaphthalene	NS	NS	3.3	U	1.6	U	3.4	U	7	U
2-Chlorophenol	100	300	3.3	U	1.6	U	3.4	U	7	U
2-Methylphenol	NS	NS	3.3	U	1.6	U	3.4	U	7	U
2-Nitrophenol	NS	NS	7.2	U	3.5	U	7.2	U	15	U
3,3'-Dichlorobenzidine	1	10	**3.3**	**U**	**1.6**	**U**	**3.4**	**U**	**7**	**U**
3-Methylphenol/4-Methylphenol	NS	NS	4.8	U	2.4	U	4.8	U	10	U
4-Bromophenyl phenyl ether	NS	NS	3.3	U	1.6	U	3.4	U	7	U
4-Chloroaniline	NS	NS	3.3	U	1.6	U	3.4	U	7	U
4-Nitrophenol	NS	NS	4.7	U	2.3	U	4.7	U	9.7	U
Acetophenone	NS	NS	3.3	U	1.6	U	3.4	U	7	U
Aniline	NS	NS	4	U	2	U	4	U	8.4	U
Azobenzene	NS	NS	3.3	U	1.6	U	3.4	U	7	U
Bis(2-chloroethoxy)methane	NS	NS	3.6	U	1.8	U	3.6	U	7.5	U
Bis(2-chloroethyl)ether	0.7	3	**3**	**U**	**1.5**	**U**	**3**	**U**	**6.3**	**U**
Bis(2-chloroisopropyl)ether	3	50	**4**	**U**	2	U	**4**	**U**	**8.4**	**U**
Bis(2-Ethylhexyl)phthalate	200	700	3.3	U	1.6	U	3.4	U	7	U
Butyl benzyl phthalate	NS	NS	3.3	U	1.6	U	3.4	U	7	U
Di-n-butylphthalate	NS	NS	3.3	U	1.6	U	3.4	U	7	U
Di-n-octylphthalate	NS	NS	3.3	U	1.6	U	3.4	U	7	U
Dibenzofuran	NS	NS	3.3	U	1.6	U	3.4	U	7	U
Diethyl phthalate	300	300	3.3	U	1.6	U	3.4	U	7	U
Dimethyl phthalate	600	600	3.3	U	1.6	U	3.4	U	7	U
Hexachlorobenzene	0.7	5	**2**	**U**	**0.98**	**U**	**2**	**U**	**4.2**	**U**
Hexachlorobutadiene	6	90	3.3	U	1.6	U	3.4	U	**7**	**U**
Hexachloroethane	9	100	2.7	U	1.3	U	2.7	U	5.6	U
Isophorone	NS	NS	3	U	1.5	U	3	U	6.3	U
Nitrobenzene	NS	NS	3	U	1.5	U	3	U	6.3	U
Pentachlorophenol	10	10	6.7	U	3.3	U	6.7	U	**14**	**U**
Phenol	20	20	3.3	U	1.6	U	3.4	U	7	U

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)
U - Compound was not detected at specified quantitation limit.
Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards or elevated reporting limits for non-detects
NS - No Method 1 soil standard
EPH - Extractable Petroleum Hydrocarbons
PAH - Polycyclic Aromatic Hydrocarbons
SVOC - Semi-volatile Organic Compounds
Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3
The sitewide soil data set includes samples collected from 0 to 15 feet below ground surface (bgs)
NA - Not analyzed
The maximum detected concentration between a parent and duplicate or lowest reporting limit for non-detects was used to represent that sample.

Table 4-6
Summary of EPH, PAH and SVOV Analytical Results Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards	Sample ID: TP-09 Sample Depth(ft.): 0-3 Sample Date: 11/09/11	TP-10 0-3 11/09/11	TP-11 0-3 11/09/11
EPH						
(mg/kg)	C_9-C_{18} Aliphatic hydrocarbons	1,000	3,000	NA	NA	NA
	C_{19}-C_{36} Aliphatic hydrocarbons	3,000	5,000	NA	NA	NA
	C_{11}-C_{22} Aromatic hydrocarbons	1,000	3,000	NA	NA	NA
	Naphthalene	500	1,000	NA	NA	NA
	2-Methylnaphthalene	300	500	NA	NA	NA
	Phenanthrene	500	1,000	NA	NA	NA
	Acenaphthene	1,000	3,000	NA	NA	NA
	Acenaphthylene	10	10	NA	NA	NA
	Fluorene	1,000	3,000	NA	NA	NA
	Anthracene	1,000	3,000	NA	NA	NA
	Fluoranthene	1,000	3,000	NA	NA	NA
	Pyrene	1,000	3,000	NA	NA	NA
	Benzo(a)anthracene	7	40	NA	NA	NA
	Chrysene	70	400	NA	NA	NA
	Benzo(b)fluoranthene	7	40	NA	NA	NA
	Benzo(k)fluoranthene	70	400	NA	NA	NA
	Benzo(a)pyrene	2	4	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	40	NA	NA	NA
	Dibenzo(a,h)anthracene	0.7	4	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	3,000	NA	NA	NA
PAHs						
	Naphthalene	500	1,000	NA	NA	NA
	2-Methylnaphthalene	300	500	NA	NA	NA
	Phenanthrene	500	1,000	NA	NA	NA
	Acenaphthene	1,000	3,000	NA	NA	NA
	Acenaphthylene	10	10	NA	NA	NA
	Fluorene	1,000	3,000	NA	NA	NA
	Anthracene	1,000	3,000	NA	NA	NA
	Fluoranthene	1,000	3,000	NA	NA	NA
	Pyrene	1,000	3,000	NA	NA	NA
	Benzo(a)anthracene	7	40	NA	NA	NA
	Chrysene	70	400	NA	NA	NA
	Benzo(b)fluoranthene	7	40	NA	NA	NA
	Benzo(k)fluoranthene	70	400	NA	NA	NA
	Benzo(a)pyrene	2	4	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	40	NA	NA	NA
	Dibenzo(a,h)anthracene	0.7	4	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	3,000	NA	NA	NA
SVOCs						
	Naphthalene	500	1,000	1.9 U	0.38 U	0.36 U
	2-Methylnaphthalene	300	500	2.3 U	0.46 U	0.44 U
	Phenanthrene	500	1,000	1.2 U	0.23 U	0.22 U
	Acenaphthene	1,000	3,000	1.5 U	0.3 U	0.29 U
	Acenaphthylene	10	10	1.5 U	0.3 U	0.29 U
	Fluorene	1,000	3,000	1.9 U	0.38 U	0.36 U
	Anthracene	1,000	3,000	1.2 U	0.23 U	0.22 U
	Fluoranthene	1,000	3,000	1.2	0.23 U	0.22 U
	Pyrene	1,000	3,000	1.2	0.23	0.22 U
	Benzo(a)anthracene	7	40	1.2 U	0.23 U	0.22 U
	Chrysene	70	400	1.2 U	0.23 U	0.22 U
	Benzo(b)fluoranthene	7	40	1.2 U	0.23 U	0.22 U
	Benzo(k)fluoranthene	70	400	1.2 U	0.23 U	0.22 U
	Benzo(a)pyrene	2	4	1.5 U	0.3 U	0.29 U
	Indeno(1,2,3-cd)pyrene	7	40	1.5 U	0.3 U	0.29 U
	Dibenzo(a,h)anthracene	0.7	4	**1.2 U**	0.23 U	0.22 U
	Benzo(g,h,i)perylene	1,000	3,000	1.5 U	0.3 U	0.29 U
	1,2,4-Trichlorobenzene	500	900	1.9 U	0.38 U	0.36 U
	1,2-Dichlorobenzene	300	300	1.9 U	0.38 U	0.36 U
	1,3-Dichlorobenzene	100	500	1.9 U	0.38 U	0.36 U
	1,4-Dichlorobenzene	50	300	1.9 U	0.38 U	0.36 U

Table 4-6
Summary of EPH, PAH and SVOV Analytical Results Included in the Sitewide Soil Data Set

Liberty Street
New Bedford, Massachusetts

Analysis / Analyte	S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards	Sample ID: TP-09 Sample Depth(ft.): 0-3 Sample Date: 11/09/11		Sample ID: TP-10 Sample Depth(ft.): 0-3 Sample Date: 11/09/11		Sample ID: TP-11 Sample Depth(ft.): 0-3 Sample Date: 11/09/11	
2,4,5-Trichlorophenol	600	600	1.9	U	0.38	U	0.36	U
2,4,6-Trichlorophenol	20	20	1.2	U	0.23	U	0.22	U
2,4-Dichlorophenol	40	40	1.7	U	0.34	U	0.33	U
2,4-Dimethylphenol	500	1,000	1.9	U	0.38	U	0.36	U
2,4-Dinitrophenol	50	990	9.2	U	1.8	U	1.8	U
2,4-Dinitrotoluene	2	10	1.9	U	0.38	U	0.36	U
2,6-Dinitrotoluene	NS	NS	1.9	U	0.38	U	0.36	U
2-Chloronaphthalene	NS	NS	1.9	U	0.38	U	0.36	U
2-Chlorophenol	100	300	1.9	U	0.38	U	0.36	U
2-Methylphenol	NS	NS	1.9	U	0.38	U	0.36	U
2-Nitrophenol	NS	NS	4.2	U	0.82	U	0.79	U
3,3'-Dichlorobenzidine	1	10	**1.9**	**U**	0.38	U	0.36	U
3-Methylphenol/4-Methylphenol	NS	NS	2.8	U	0.55	U	0.53	U
4-Bromophenyl phenyl ether	NS	NS	1.9	U	0.38	U	0.36	U
4-Chloroaniline	NS	NS	1.9	U	0.38	U	0.36	U
4-Nitrophenol	NS	NS	2.7	U	0.53	U	0.51	U
Acetophenone	NS	NS	1.9	U	0.38	U	0.36	U
Aniline	NS	NS	2.3	U	0.46	U	0.44	U
Azobenzene	NS	NS	1.9	U	0.38	U	0.36	U
Bis(2-chloroethoxy)methane	NS	NS	2.1	U	0.41	U	0.39	U
Bis(2-chloroethyl)ether	0.7	3	**1.7**	**U**	0.34	U	0.33	U
Bis(2-chloroisopropyl)ether	3	50	2.3	U	0.46	U	0.44	U
Bis(2-Ethylhexyl)phthalate	200	700	1.9	U	0.38	U	0.36	U
Butyl benzyl phthalate	NS	NS	1.9	U	0.38	U	0.36	U
Di-n-butylphthalate	NS	NS	1.9	U	0.38	U	0.36	U
Di-n-octylphthalate	NS	NS	1.9	U	0.38	U	0.36	U
Dibenzofuran	NS	NS	1.9	U	0.38	U	0.36	U
Diethyl phthalate	300	300	1.9	U	0.38	U	0.36	U
Dimethyl phthalate	600	600	1.9	U	0.38	U	0.36	U
Hexachlorobenzene	0.7	5	**1.2**	**U**	0.23	U	0.22	U
Hexachlorobutadiene	6	90	1.9	U	0.38	U	0.36	U
Hexachloroethane	9	100	1.5	U	0.3	U	0.29	U
Isophorone	NS	NS	1.7	U	0.34	U	0.33	U
Nitrobenzene	NS	NS	1.7	U	0.34	U	0.33	U
Pentachlorophenol	10	10	3.8	U	0.76	U	0.73	U
Phenol	20	20	1.9	U	0.38	U	0.36	U

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)

U - Compound was not detected at specified quantitation limit.

Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards or elevated reporting limits for non-detects

NS - No Method 1 soil standard

EPH - Extractable Petroleum Hydrocarbons

PAH - Polycyclic Aromatic Hydrocarbons

SVOC - Semi-volatile Organic Compounds

Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3

The sitewide soil data set includes samples collected from 0 to 15 feet below ground surface (bgs)

NA - Not analyzed

The maximum detected concentration between a parent and duplicate or lowest reporting limit for non-detects was used to represent that sample.

Table 4-7
Summary of VOC Analytical Results Included in the Surface Soil and Sitewide Soil Data Sets

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards	Sample ID:	TRC-BTM-1	TRC-BTM-2	TRC-BTM-22	TRC-BTM-3	TRC-ESW
				Sample Date:	12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009
				Sample Depth (ft):	1	1	1	0.5	0-1
							Field Dup		
VOCs									
(mg/kg)	Acetone	400	400		0.082 U	0.069 U	0.070 U	0.067 U	0.076 U
	tert-Amyl Methyl Ether (TAME)	NS	NS		0.00082 U	0.00069 U	0.00070 U	0.00067 U	0.00076 U
	Benzene	30	200		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	Bromobenzene	NS	NS		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	Bromochloromethane	NS	NS		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	Bromodichloromethane	20	100		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	Bromoform	200	800		0.0082 U	0.0069 U	0.0070 U	0.0067 U	0.0076 U
	Bromomethane	30	300		0.0082 U	0.0069 U	0.0070 U	0.0067 U	0.0076 U
	2-Butanone (MEK)	400	400		0.033 U	0.028 U	0.028 U	0.027 U	0.030 U
	n-Butylbenzene	NS	NS		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	sec-Butylbenzene	NS	NS		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	tert-Butylbenzene	NS	NS		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	tert-Butyl Ethyl Ether (TBEE)	NS	NS		0.00082 U	0.00069 U	0.00070 U	0.00067 U	0.00076 U
	Carbon Disulfide	NS	NS		0.0049 U	0.0042 U	0.0042 U	0.0040 U	0.0046 U
	Carbon Tetrachloride	10	60		0.0082 U	0.0069 U	0.0070 U	0.0067 U	0.0076 U
	Chlorobenzene	100	100		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	Chlorodibromomethane	20	100		0.00082 U	0.00069 U	0.00070 U	0.00067 U	0.00076 U
	Chloroethane	NS	NS		0.016 U	0.014 U	0.014 U	0.013 U	0.015 U
	Chloroform	400	800		0.0033 U	0.0028 U	0.0028 U	0.0027 U	0.0030 U
	Chloromethane	NS	NS		0.0082 U	0.0069 U	0.0070 U	0.0067 U	0.0076 U
	2-Chlorotoluene	NS	NS		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	4-Chlorotoluene	NS	NS		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	1,2-Dibromo-3-chloropropane (DBCP)	NS	NS		0.0082 U	0.0069 U	0.0070 U	0.0067 U	0.0076 U
	1,2-Dibromoethane (EDB)	0.7	4		0.00082 U	0.00069 U	0.00070 U	0.00067 U	0.00076 U
	Dibromomethane	NS	NS		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	1,2-Dichlorobenzene	300	300		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	1,3-Dichlorobenzene	100	500		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	1,4-Dichlorobenzene	50	300		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	Dichlorodifluoromethane (Freon 12)	NS	NS		0.016 U	0.014 U	0.014 U	0.013 U	0.015 U
	1,1-Dichloroethane	500	1,000		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	1,2-Dichloroethane	10	90		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	1,1-Dichloroethylene	500	1,000		0.0033 U	0.0028 U	0.0028 U	0.0027 U	0.0030 U
	cis-1,2-Dichloroethylene	100	500		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	trans-1,2-Dichloroethylene	500	1,000		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	1,2-Dichloropropane	10	100		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	1,3-Dichloropropane	NS	NS		0.00082 U	0.00069 U	0.00070 U	0.00067 U	0.00076 U
	2,2-Dichloropropane	NS	NS		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	1,1-Dichloropropene	NS	NS		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	cis-1,3-Dichloropropene	NS	NS		0.00082 U	0.00069 U	0.00070 U	0.00067 U	0.00076 U
	trans-1,3-Dichloropropene	NS	NS		0.00082 U	0.00069 U	0.00070 U	0.00067 U	0.00076 U
	Diethyl Ether	NS	NS		0.016 U	0.014 U	0.014 U	0.013 U	0.015 U
	Diisopropyl Ether (DIPE)	NS	NS		0.00082 U	0.00069 U	0.00070 U	0.00067 U	0.00076 U
	1,4-Dioxane	70	500		0.082 U	0.069 U	0.070 U	0.067 U	0.076 U
	Ethylbenzene	500	1,000		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	Hexachlorobutadiene	6	90		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	2-Hexanone (MBK)	NS	NS		0.016 U	0.014 U	0.014 U	0.013 U	0.015 U
	Isopropylbenzene (Cumene)	NS	NS		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	p-Isopropyltoluene (p-Cymene)	NS	NS		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	Methyl tert-Butyl Ether (MTBE)	100	500		0.0033 U	0.0028 U	0.0028 U	0.0027 U	0.0030 U
	Methylene Chloride	200	900		0.016 U	0.014 U	0.014 U	0.013 U	0.015 U
	4-Methyl-2-pentanone (MIBK)	400	400		0.016 U	0.014 U	0.014 U	0.013 U	0.015 U
	Naphthalene	500	1,000		0.0033 U	0.0028 U	0.0028 U	0.0027 U	0.0030 U
	n-Propylbenzene	NS	NS		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	Styrene	30	200		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	1,1,1,2-Tetrachloroethane	7	100		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	1,1,2,2-Tetrachloroethane	0.8	10		0.00082 U	0.00069 U	0.00070 U	0.00067 U	0.00076 U
	Tetrachloroethylene	30	200		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	Tetrahydrofuran	NS	NS		0.0082 U	0.0069 U	0.0070 U	0.0067 U	0.0076 U
	Toluene	500	1,000		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	1,2,3-Trichlorobenzene	NS	NS		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	1,2,4-Trichlorobenzene	500	900		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U

Table 4-7
Summary of VOC Analytical Results Included in the Surface Soil and Sitewide Soil Data Sets

Liberty Street
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-3 Method 1 Soil Standards	S-2/GW-3 Method 1 Soil Standards	Sample ID:	TRC-BTM-1	TRC-BTM-2	TRC-BTM-22	TRC-BTM-3	TRC-ESW
				Sample Date:	12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009
				Sample Depth (ft):	1	1	1	0.5	0-1
							Field Dup		
	1,1,1-Trichloroethane	500	1,000		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	1,1,2-Trichloroethane	4	60		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	Trichloroethylene	90	700		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	Trichlorofluoromethane (Freon 11)	NS	NS		0.0082 U	0.0069 U	0.0070 U	0.0067 U	0.0076 U
	1,2,3-Trichloropropane	NS	NS		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	1,2,4-Trimethylbenzene	NS	NS		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	1,3,5-Trimethylbenzene	NS	NS		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	Vinyl Chloride	0.6	4		0.0082 U	0.0069 U	0.0070 U	0.0067 U	0.0076 U
	m+p Xylene	NS	NS		0.0033 U	0.0028 U	0.0028 U	0.0027 U	0.0030 U
	o-Xylene	NS	NS		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U
	Total Xylenes (calculated)	500	1,000		0.0016 U	0.0014 U	0.0014 U	0.0013 U	0.0015 U

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm)

NS - No Method 1 soil standard

U - Compound was not detected at specified quantitation limit

VOCs - Volatile Organic Compounds

Values in **Bold** indicate the compound was detected above one or more of the Method 1 Soil Standards

Method 1 Soil Standards from 310 CMR 40.0975(6)(a): Table 2 and 310 CMR 40.0975(6)(b): Table 3

The surface soil data set includes samples collected from 0 to 3 feet below ground surface (bgs)

The sitewide soil data set includes samples collected from 0 to 15 feet below ground surface (bgs)

NA - Not analyzed

Total xylenes includes the sum of detected isomers or the lowest reporting limit for non-detects.

Table 4-8
Summary of Detected Chemicals and Selection of Chemicals of Concern for Surface Soil

Liberty Street
New Bedford, Massachusetts

Parameter	Minimum Detected Concentration (mg/kg)	Maximum Detected Concentration (mg/kg)	MassDEP Background Concentration[(1)] (mg/kg)	Number of Detected Samples	Number of Samples	Frequency of Detection	Selected as a Chemical of Concern?	Reason for Exclusion
Metals								
Arsenic	0.72	7.3	20	11	11	100%	No	Background
Chromium	9.5	16	40	11	11	100%	No	Background
Lead	6.3	260	600	11	11	100%	No	Background
Mercury	0.07	0.18	1	7	11	64%	No	Background
Polychlorinated Biphenyls								
PCBs	0.061	3.92	NE	15	16	94%	Yes	
EPH/PAHs/SVOCs								
C_9-C_{18} Aliphatic hydrocarbons	21	21	NE	1	1	100%	Yes	
C_{19}-C_{36} Aliphatic hydrocarbons	110	110	NE	1	1	100%	Yes	
C_{11}-C_{22} Aromatic hydrocarbons	129	129	NE	1	1	100%	Yes	
Phenanthrene	1.4	3.6	20	5	12	42%	No	Background
Acenaphthylene	0.32	0.32	1	1	12	8%	No	Background/FOD
Fluorene	0.36	0.37	2	2	12	17%	No	Background
Anthracene	0.37	0.48	4	2	12	17%	No	Background
Fluoranthene	1.2	5.2	10	9	12	75%	No	Background
Pyrene	0.23	5.6	20	11	12	92%	No	Background
Benzo(a)anthracene	0.87	2.4	9	5	12	42%	No	Background
Chrysene	0.96	2.6	7	5	12	42%	No	Background
Benzo(b)fluoranthene	0.58	1.3	8	4	12	33%	No	Background
Benzo(k)fluoranthene	0.48	1.2	4	4	12	33%	No	Background
Benzo(a)pyrene	0.77	1.4	7	4	12	33%	No	Background
Indeno(1,2,3-cd)pyrene	0.4	0.73	3	3	12	25%	No	Background
Benzo(g,h,i)perylene	0.43	0.89	3	3	12	25%	No	Background

Notes:
NA: Not applicable
ND: Not detected
NE: No background concentration established
EPH: Extractable Petroleum Hydrocarbons
PAHs: Polycyclic Aromatic Hydrocarbons
SVOCs: Semi-volatile Organic Compounds
Background: Eliminated based on background concentrations (maximum detected concentration was less than or equal to background level)
FOD: Eliminated based on a low frequency of detection of 10% or less
(1): Background levels in soil containing coal or wood ash from: Technical Update: *Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in Soil* . MassDEP. May, 2002b.

Table 4-9
Summary of Detected Chemicals and Selection of Chemicals of Concern for Sitewide Soil

Liberty Street
New Bedford, Massachusetts

Parameter	Minimum Detected Concentration (mg/kg)	Maximum Detected Concentration (mg/kg)	MassDEP Background Concentration[(1)] (mg/kg)	Number of Detected Samples	Number of Samples	Frequency of Detection	Selected as a Chemical of Concern?	Reason for Exclusion
Metals								
Arsenic	0.72	18.4	20	17	18	94%	No	Background
Barium	27.8	707	50	7	7	100%	Yes	
Beryllium	0.36	0.87	0.9	4	7	57%	No	Background
Cadmium	0.49	2.92	3	5	18	28%	No	Background
Chromium	5.27	35.9	40	18	18	100%	No	Background
Lead	2.48	1,500	600	18	18	100%	Yes	
Nickel	3.72	73.6	30	7	7	100%	Yes	
Silver	1.11	12.2	5	7	7	100%	Yes	
Vanadium	9.43	34.5	30	7	7	100%	Yes	
Zinc	12.3	579	300	7	7	100%	Yes	
Mercury	0.07	2.47	1	13	18	72%	Yes	
Polychlorinated Biphenyls								
PCBs	0.0607	3.918	NE	22	45	49%	Yes	
EPH/PAHs/SVOCs								
C_9-C_{18} Aliphatic hydrocarbons	21	21	NE	1	1	100%	Yes	
C_{19}-C_{36} Aliphatic hydrocarbons	110	110	NE	1	1	100%	Yes	
C_{11}-C_{22} Aromatic hydrocarbons	129	129	NE	1	1	100%	Yes	
Phenanthrene	0.459	4.16	20	9	19	47%	No	Background
Acenaphthylene	0.32	0.32	1	1	19	5%	No	Background/FOD
Fluorene	0.36	0.37	2	2	19	11%	No	Background
Anthracene	0.197	1.23	4	4	19	21%	No	Background
Fluoranthene	0.293	5.52	10	14	19	74%	No	Background
Pyrene	0.23	5.9	20	16	19	84%	No	Background
Benzo(a)anthracene	0.448	3.95	9	9	19	47%	No	Background
Chrysene	0.501	3.97	7	9	19	47%	No	Background
Benzo(b)fluoranthene	0.58	4.25	8	8	19	42%	No	Background
Benzo(k)fluoranthene	0.237	1.81	4	8	19	42%	No	Background
Benzo(a)pyrene	0.41	3.57	7	8	19	42%	No	Background
Indeno(1,2,3-cd)pyrene	0.261	1.97	3	7	19	37%	No	Background
Benzo(g,h,i)perylene	0.367	1.49	3	6	19	32%	No	Background

Notes:
NE: No background concentration established
EPH: Extractable Petroleum Hydrocarbons
PAHs: Polycyclic Aromatic Hydrocarbons
SVOCs: Semi-volatile Organic Compounds
Background: Eliminated based on background concentrations (maximum detected concentration was less than or equal to background level)
FOD: Eliminated based on a low frequency of detection of 10% or less
(1): Background levels in soil containing coal or wood ash from: Technical Update: *Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in Soil* . MassDEP. May, 2002b.

Table 4-10

Averaging Criteria Check for Surface Soil Using Risk-Based Concentrations [1]

Liberty Street
New Bedford, Massachusetts

Chemical	RBC (mg/kg)	EPC [2] (mg/kg)	Number of Samples Above RBC	Number of Samples	Percentage of Samples Above RBC	Percentage of Samples Below RBC	Number of Samples 10 Times Greater than RBC
Polychlorinated Biphenyls							
PCBs	2	0.54	1	16	6%	94%	0
EPH/PAHs/SVOCs							
C_9-C_{18} Aliphatic hydrocarbons	3,000	21	0	1	0%	100%	0
C_{19}-C_{36} Aliphatic hydrocarbons	3,000	110	0	1	0%	100%	0
C_{11}-C_{22} Aromatic hydrocarbons	1,000	129	0	1	0%	100%	0

Notes:
mg/kg: milligrams per kilogram
RBC: Risk Based Concentration based on the S-1/GW-3 soil standard
EPC: Exposure Point Concentration
(1): Average concentrations are below RBCs; 75% of the data points are below RBCs; and no result is 10 times greater than an RBC. Therefore, it is appropriate to use average concentrations for EPCs.
(2): Since only one sample was included in the data set for the EPH ranges, the detected concentration of each was used as the EPC.

Table 4-11

Averaging Criteria Check for Sitewide Soil Using Risk-Based Concentrations [(1)]

Liberty Street
New Bedford, Massachusetts

Chemical	RBC (mg/kg)	EPC [(2)] (mg/kg)	Number of Samples Above RBC	Number of Samples	Percentage of Samples Above RBC	Percentage of Samples Below RBC	Number of Samples 10 Times Greater than RBC
Metals							
Barium	3,000	298	0	7	0%	100%	0
Lead	300	287	5	21	24%	76%	0
Nickel	700	25	0	7	0%	100%	0
Silver	200	5.0	0	7	0%	100%	0
Vanadium	1,000	22	0	7	0%	100%	0
Zinc	3,000	356	0	7	0%	100%	0
Mercury	30	0.26	0	18	0%	100%	0
Polychlorinated Biphenyls							
PCBs	3	0.29	1	45	2%	98%	0
EPH/PAHs/SVOCs							
C_9-C_{18} Aliphatic hydrocarbons	3,000	21	0	1	0%	100%	0
C_{19}-C_{36} Aliphatic hydrocarbons	5,000	110	0	1	0%	100%	0
C_{11}-C_{22} Aromatic hydrocarbons	3,000	129	0	1	0%	100%	0

Notes:
mg/kg: milligrams per kilogram
RBC: Risk Based Concentration based on the S-2/GW-3 soil standard
EPC: Exposure Point Concentration
(1): Average concentrations are below RBCs; 75% of the data points are below RBCs; and no result is 10 times greater than an RBC. Therefore, it is appropriate to use average concentrations for EPCs.
(2): Since only one sample was included in the data set for the EPH ranges, the detected concentration of each was used as the EPC.

Section 5
Phase II Completion Statement

This section presents a summary of the Phase II CSA. Public involvement documentation, as required by 310 CMR 40.1403(3)(e), is included as **Appendix A** of this report. The Phase II CSA portion of this Phase II CSA/RAO-P Statement covers the nature and extent of impacts of the site, addresses the potential current and future risks to human health and the environment, and provides recommendations for closure at the site.

5.1 Phase II CSA Summary and Completion Statement

A total of 60 soil samples were collected and analyzed during site investigation activities completed to support the Phase II CSA. CDM Smith collected a total of 17 samples during two test pit programs conducted in November 2011 and May 2012. These samples supplemented a total of 43 samples collected by TRC to characterize the edge of the property along Liberty Street, support a URAM, and to conduct post-remedial characterization of a portion of the site from which 55-gallon drums were removed. These data identified lead and other metals, PCBs, and PAHs in soil at locations across the site. The 11 soil samples collected during the November 2011 test pit program from depths of approximately 0-3 feet identified select metals and PAHs across the site as well as coal ash and debris at one location (TP-2). The six samples collected during the May 2012 test pit program further characterized lead concentrations in the vicinity of a location (SB-212) previously identified to warrant additional evaluation for lead. Lead concentrations from samples collected at these test pits ranged from 67 ppm to 550 ppm. Collectively, the data supporting the Phase II CSA and the historical record indicate that soil conditions are likely associated with wide distribution of fill material across the site. Compounds detected in the site surface soil (zero to 3 feet) and sitewide data set (zero to 15 feet) include metals, EPH ranges, PAH target analytes, and PCBs. The concentrations of metals and PAHs were below typical background concentrations associated with coal or wood ash. Historically impacted soil/ fill material across the site is generally within the top five feet of the surface.

Due to the properties and nature of metals, PAHs, and PCBs identified in soil at the site, they are likely to remain in the soil matrix. Due to their low solubility in water, metals, PAHs, and PCBs found in soil are not likely to impact groundwater. Thus, groundwater, which is located approximately five to seven feet below ground surface, is not a medium of concern for the Liberty Street Parcel. Thus, CDM Smith has completed the Phase II CSA for the site. The affected medium at the site has been identified as soil, which has been adequately characterized as to the nature and extent of impact from releases at the site.

A condition of no significant risk of harm to health, public welfare, and the environment exists at the site for current exposure to surface soil based on the results of a Method 1 risk characterization. A level of no significant risk exists for safety as well. The EPCs for COCs in site-wide soil are below the applicable S-2/GW-3 soil standards; however, the EPC for nickel is above the most stringent S-1/GW-3 soil standard. Since a condition of no significant risk exists at the site, no remedial actions are required and, therefore, a Phase III is not required. However, the site is not acceptable for unrestricted future use and an Activity and Use Limitation (AUL) is required to maintain a condition of no significant risk at the site. The AUL, which has been implemented at this site to support the RAO-P described in this combined submittal, restricts the use of the property, e.g., prohibiting unrestricted future residential

use of the property. The AUL requires a soil management plan for any future excavations of soil at the site.

5.2 LSP Opinion

The response actions that are the subject of this submittal (i) have been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) are appropriate and reasonable to accomplish the purposes of such response actions as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) comply with the identified provisions of all orders, permits, and approvals identified in this submittal.

Section 6

Justification for Class B-2 Partial Response Action Outcome

This section provides the necessary information to demonstrate that the requirements of a Class B-2 RAO-P pursuant to 310 CMR 40.1000 have been met for the Liberty Street Parcel portion of RTN 4-15685. The boundary of this portion of the disposal site subject to this RAO-P is illustrated on Figure 1-2. The Class B-2 RAO-P is applicable to a site if the following applies:

- Disposal sites where remedial actions have not been conducted because a level of No Significant Risk exists but such a level of No Significant Risk is contingent upon an Activity and Use Limitation (AUL); and
- No concentration of oil or hazardous material exceeds an Upper Concentration Limit (UCL) in soil or groundwater.

Based on the outcome of the site investigation for the Liberty Street Parcel, the site is eligible for a Class B-2 RAO-P for the following reasons:

1. A level of No Significant Risk exists at the site for current and all reasonably foreseeable future uses, based on the results of a Method 1 Risk Characterization.
2. Based on the site evaluation, the Liberty Street Parcel data does not exceed the UCLs.
3. An AUL has been placed on the parcel. The AUL area has been set as the limits of the property that will be used for future development for solar panels. The AUL restricts future residential use of the property and requires a soil management plan for future excavations at the site. A copy of the AUL is presented in **Appendix F**.