MODIFIED PHASE III IDENTIFICATION, EVALUATION AND SELECTION OF COMPREHENSIVE REMEDIAL ACTION ALTERNATIVES (REMEDIAL ACTION PLAN)

Nemasket Street Lots
New Bedford, Massachusetts

Release Tracking Number 4-15685

Prepared for:

City of New Bedford
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Acronyms

ACEC	Area of Critical Environmental Concern
AUL	Activity and Use Limitation
BETA	BETA Group, Incorporated
BOL	Bill of Lading
CFR	Code of Federal Regulations
COCs	Chemicals of Concern
COPCs	Chemicals of Potential Concern
CSA	Comprehensive Site Assessment
DPI	Department of Public Infrastructure
ELCR	Excess Lifetime Cancer Risk
EPA	United States Environmental Protection Agency
EP	Exposure Point
EPCs	Exposure Point Concentrations
EPH	Extractable Petroleum Hydrocarbons
HASP	Health and Safety Plan
HI	Hazard Index
HQ	Hazard Quotient
IH	Imminent Hazard
KMS	Keith Middle School
LSP	Licensed Site Professional
MassDEP	Massachusetts Department of Environmental Protection
MassGIS	Massachusetts Geographic Information System
MCP	Massachusetts Contingency Plan
mg/kg	Milligrams per Kilogram
mg/m^3	Milligrams per Cubic Meter
MSR	Material Shipping Record
NBHS	New Bedford High School
NEA	Northeast Analytical Laboratories
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyl
PCDD	Polychlorinated Dibenzo-p-dioxin
PCDF	Polychlorinated Dibenzofuran
pg/g	Picograms per Gram
PID	Photoionization Detector
PPE	Personal Protective Equipment
QC	Quality Control
ppm	Parts per Million
PSWS	Parker Street Waste Site
RAFs	Relative Absorption Factors
RAM	Release Abatement Measure
RCRA	Resource Conservation and Recovery Act
RDA	Request for Determination of Applicability

RfCs	Reference Concentrations
RfDs	Reference Doses
RTN	Release Tracking Number
SFs	Slope Factors
SVOCs	Semivolatile Organic Compounds
SWPPP	Stormwater Pollution Prevention Plan
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxicity Equivalent
TPH	Total Petroleum Hydrocarbons
TRC	TRC Environmental Corporation
TSCA	Toxic Substances Control Act
UCL	Upper Concentration Limit
UR	Unit Risk
USACOE	United States Army Corps of Engineers
USGS	United States Geological Survey
VOCs	Volatile Organic Compounds
VPH	Volatile Petroleum Hydrocarbons
WPA	Wetland Protection Act

1.0 INTRODUCTION

TRC Environmental Corporation (TRC) prepared this Massachusetts Contingency Plan (MCP; 310 CMR 40.0000) Modified Phase III Identification, Evaluation and Selection of Comprehensive Remedial Action Alternatives (Phase III) report for the following Nemasket Street parcels: map 69, blocks 86 through 93, and blocks 96 through 100 (hereinafter "Nemasket Street Lots" and/or "the Site"). The Nemasket Street Lots are tracked by the Massachusetts Department of Environmental Protection (MassDEP) under Release Tracking Number (RTN) 4-15685. The Site is located on the eastern end of Ruggles Street at or near the intersection of Hathaway Boulevard in New Bedford, Massachusetts. The Universal Transverse Mercator (UTM) coordinates for the Site are 337,689.99 meters east and 4,612,013.82 meters north in Zone 19. The Site location is identified on Figure 1.

This Modified Phase III was completed for the City of New Bedford, Massachusetts (the "City") and finalizes the Phase III based on public comments on the November 2014 and November 2015 Public Comment Draft Phase IIIs,, the City's response to public comments issued in April 2015 (included as Appendix E), and other developments with respect to the property use and the remedial plan as addressed herein. This document complements the documentation of response actions detailed in the Phase II Comprehensive Site Assessment report (hereinafter "Phase II CSA report") submitted to MassDEP on September 2, 2011. The use of a Phase III for the Nemasket Street Lots is consistent with MassDEP policy and the overall approach being used by the City of dividing the Parker Street Waste Site (PSWS) into logical and manageable components to successfully and productively implement response actions at this complex site. The most recent example is the remediation of the acquired residential properties at Ruggles and Greenwood Streets. Matters at private properties near the perimeter of the PSWS, where EPA has exercised its involvement, are actively being reviewed by the City as separate actions due to a higher need for sensitivity and discretion at privately owned properties.

This Modified Phase III report also satisfies the requirements for a Risk-Based Work Plan pursuant to 40 CFR 761.61(c) of the Toxic Substances Control Act (TSCA; 40 CFR §761) and United States Environmental Protection Agency (EPA) Region 1 guidance.

The Site owner and Licensed Site Professional (LSP) contact information is as follows:

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2.0 SITE DESCRIPTION AND BACKGROUND INFORMATION

A Site Location Map is provided as Figure 1, which illustrates the general Site vicinity within the City of New Bedford, Massachusetts. The Site occupies approximately 1.6 acres and includes the following parcels: map 69, blocks 86 through 93, and blocks 96 through 100. These parcels have never been residentially or commercially developed. The Site is located on the eastern end of Ruggles Street at or near the intersection of Hathaway Boulevard.

The Site is generally level with shallow slopes leading to an isolated vegetated wetland in the western portion. A limited sloped area is also present on the western end of the Site leading up to adjacent private residences. The Site was cleared in October 2010 to facilitate environmental investigation activities but vegetation (primarily grass, weeds and small brush) has since re-established itself.

Properties in the vicinity of the Site are connected to municipal water and sewer. A private water supply well is located within 500 feet of the northwest corner of the Site; however, the property where the private water well is located is also connected to the municipal water system. New Bedford Harbor is located approximately 1.4 miles east of the Site.

2.1 Site Geology and Hydrogeology

Observation of Site soils and review of historic topographic maps indicates that surficial geology at the Site consists of glacial outwash sediments and potentially eolian derived deposits. Drumlins flank the Site to the east and west. Based on review of the United States Geological Survey (USGS) Bedrock Geologic Map of Massachusetts (Zen et al., 1983), bedrock beneath the Site is light gray, pinkish-gray to tan, mafic-poor granite known as Alaskite (Zagr).

The Site (Figure 2) is underlain by topsoil and up to approximately 12 feet of anthropogenic fill material that includes sandy material with ash. In places, the ash fill includes, for example, broken glass, porcelain, brick fragments, rubber, clinker, coal, cinders, fabric, plastic, concrete, asphalt, wood, and/or metallic fragments. The depth of the top and bottom of fill material is varied throughout the Site, ranging from approximately 0.4 to 1.5 feet and 5 to 13 feet below ground surface, respectively. Fill thickness ranges from approximately 7.5 feet to 12.5 feet. Anthropogenic fill materials are underlain by approximately 0.3 to 3 feet of native dark brown organic peat material, mixed with silt and clay that remains from the wetland that predates the development of the area. Native soils below or in the absence of the organic peat layer are characterized by gray fine sands with trace gravel and/or silty sand.

The depth to groundwater across the Site ranges from approximately 10 to 14 feet (ft). Groundwater beneath the Site flows through an unconfined aquifer, predominantly to the southeast, at a gradient of about $5x10^{-3}$ ft/ft. The unconfined aquifer is composed of ash fill, organic peat, and/or glacial/eolian outwash sediments (listed from the ground surface down, as typically observed).

2.2 Site History

Based on a prior review of historical USGS topographic maps from 1941 and 1949, the Site was the location of a wetland area. In the 1942 (1936 survey data) map and 1949 (1948 survey data) map, the Site is illustrated as a wetland.

Based on a review of historical aerial photographs, the Site was subject to land disturbance or disposal activities between approximately the 1940s and early 1970s. The chemical profile of fill materials found at some locations of the Site are similar to those of industrial landfills, indicating that the fill material is associated with dumping from industrial sources. New Bedford High School (NBHS) was constructed between 1970 and 1972. Soils displaced for construction of the building's foundation were reportedly transported across Hathaway Boulevard to what was then vacant land (the present-day location of the Keith Middle School [KMS] and the Site). During an environmental investigation of the KMS property as a possible location for a middle school in 2000, concentrations of polychlorinated biphenyl (PCB) Aroclors above regulatory reporting criteria were detected, which led to a reporting condition to MassDEP. MassDEP assigned RTN 4-15685.

2.3 Previous Site Investigations

Following the detection of PCBs at KMS, additional investigations of the surrounding area (NBHS, Walsh Field, several residential properties along Ruggles Street, and the Site) were initiated by the BETA Group, Incorporated (BETA) on behalf of the City in connection with a conditional approval issued by the EPA (PCB Risk-Based Cleanup and Disposal Approval, McCoy Field [New Keith Middle School], New Bedford, MA, USEPA August 24, 2005).

2.3.1 Site Investigations

BETA conducted subsurface environmental investigations at the Site between September 2004 and August 2005. Soil samples were analyzed for PCBs, RCRA 8 metals, semi-volatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAHs), and dibenzofuran. Analytical results indicated chemical concentrations above MCP Method 1 S-1 soil standards in several samples. Summaries of the data collected by BETA were submitted in the following BETA reports:

- *MEMORANDUM Subsurface investigations along the northern portion of Ruggles Street R.O.W. October 22, 2004*, dated November 12, 2004.
- *MEMORANDUM Subsurface investigations along Nemasket Street September 24, 28, 29 and October 1, 2004,* dated November 16, 2004.
- *Wetlands Risk-Based Cleanup Request,* dated September 1, 2005.

During that time, BETA advanced 22 soil borings throughout the Site.

TRC subsequently advanced 47 borings, including surface soil sampling, and excavated 23 test

pits at the Site. TRC submitted a Phase II CSA report for the Site in September 2011.

2.3.2 Information Supplemental to the Phase II Report

Following the completion of remedial activities conducted by the EPA at the two properties immediately to the west of the Site in December 2010, 139 Ruggles Street and Lot 69-94 on Summit Street, EPA collected three confirmatory sidewall samples over the 0 to 3 foot depth. The samples were analyzed for PAHs, PCBs, and metals (arsenic, barium, cadmium, chromium, and lead). The sample locations are shown on Figure 2 (samples identified as P-021-EW1, P-029-EW1, and P-029-EW2) and the sample data are included in Table 1.

In June 2012, TRC conducted subsurface investigations on the slope to the west of the isolated wetland at the Site. Four samples were collected utilizing a hand auger (samples identified as SB-NM-40, SB-NM-41, SB-NM-42, and SB-NM-43) and analyzed for volatile organic compounds (VOCs), volatile and extractable petroleum hydrocarbons (VPH/EPH), SVOCs, PCBs, and RCRA 8 metals. Soil samples exhibiting metals concentrations greater than 20 times the regulatory limit listed in 310 CMR 30.125 Table 1 were also analyzed by the toxicity characteristic leaching procedure (TCLP) method. The sample locations are identified on Figure 2 and the analytical results are included in Table 1.

The sample results indicate that the area to the west of the isolated vegetated wetland is predominantly impacted by lead and PAHs, as considered in the development of remedial approaches. And while determined not to be associated with PSWS disposal activity, the lead and PAH concentrations detected in this area are generally consistent with or below those detected throughout the remainder of the Nemasket Street Lots.

2.4 Risk Characterization Summary

A Method 3 Risk Characterization was performed for the Site as part of the Phase II CSA. The Risk Characterization concluded the following:

- No Imminent Hazard conditions exist at the Site;
- For current Site conditions, a condition of No Significant Risk exists for soil, assuming the fence remains in place, and groundwater exposure pathways;
- No exceedances of Massachusetts Drinking Water Standards and Guidelines or MCP GW-1 groundwater standards were noted for the Site monitoring well classified in the GW-1 category (MW-39), indicating that a condition of No Significant Risk to human health exists for the drinking water pathway;
- An AUL was assumed to be placed on the property prohibiting residential use and construction of occupied buildings, unless further evaluation of the vapor intrusion pathway is performed; and
- Under potential future use scenarios (i.e., recreational, commercial and construction worker scenarios), a condition of No Significant Risk does not exist for potential soil impacts associated with the Site, as follows:

- Chemicals determined to pose a significant risk to human health under future conditions for the top 3 feet of soil, assuming the fencing is removed and the Site is developed, are lead, arsenic, benzo(a)pyrene, total PCBs, and/or dioxin toxicity equivalent (TEQ); and
- Chemicals determined to pose a significant risk to human health under future conditions, applicable to the top 15 feet of soil, are lead, arsenic, benzo(a)pyrene, total PCBs and/or dioxin TEQ.

3.0 PHASE III REMEDIAL ACTION ALTERNATIVES

The purpose of this Modified Phase III Remedial Action Plan is to document the results of the Identification, Evaluation, and Selection of Comprehensive Remedial Action Alternatives process performed for the Site. This section satisfies MassDEP requirements for the selection and design of remedial response actions in accordance with 310 CMR 40.0850. The certifications required per 310 CMR 40.0862(3) are provided on the MassDEP transmittal form (BWSC-108) submitted electronically via eDEP concurrent with this document.

3.1 Scope

The scope of the identification and evaluation of the remedial action alternatives process includes:

1. **Screening -** An initial screening to identify those remedial technologies that are reasonably likely to be feasible and effective.

2. **Alternative Development -** Assembly of feasible remedial technologies into remedial action alternatives that are reasonably likely to achieve a level of No Significant Risk under the MCP.

3. **Comparison -** A detailed, comparative evaluation of the selected remedial action alternatives with respect to effectiveness, reliability, difficulty of implementation, cost, risk, benefits, and timeliness. Additional details are provided for a selection of conceptual potential remedial approaches.

4. **Selection -** Selection of remedial action based on the aforementioned process.

3.2 Alternatives Analysis

3.2.1 Remedial Action Objectives and Cleanup Goals

The objective of remediation at the Site is to address the requirements of both the MCP and TSCA (as related to PCB impacts in soil) and support a future use for the Site that benefits the surrounding community. If feasible, remediation seeks to eliminate the risks identified in the Phase II CSA Risk Characterization, as presently applicable. Elimination of significant risks and the achievement of a Permanent Solution would require the demonstration that a condition of No Significant Risk has been achieved for soil and groundwater at the Site under current conditions, and will be maintained in the future under possible Site use scenarios.

The remedial goals for the Site are:

- To restrict Site uses to eliminate exposures to subsurface soil that would exceed applicable MassDEP risk thresholds;

- Achieving and maintaining a condition of No Significant Risk to human health, safety, public welfare, and the environment at the Site which does not rely on the existing fence restricting access to the Site; and
- Allowing for future Site uses that benefit the surrounding community and pose No Significant Risk to users of the Site.

A Permanent Solution must conform to the requirements set forth in 40 CFR §761 for the components of the Site that are regulated under TSCA. The remediation work discussed herein has been developed in accordance with 40 CFR §761.61(c), which outlines performance standards for a "risk-based" cleanup approach that is subject to site-specific regulatory review and concurrence by EPA Region 1.

3.2.2 Areas Requiring Response Actions

The Site occupies approximately 1.6 acres of currently undeveloped land. The MCP Method 3 Risk Characterization has concluded that a condition of No Significant Risk does not exist for soil at the Site under potential unrestricted future Site use scenarios. The remedial alternatives discussed herein address soil impacts throughout the Site.

The Site is also subject to the federal PCB regulations under TSCA.

3.2.3 Proposed Development Plans

The City plans to develop the Nemasket Street Lots and a portion of the adjacent KMS property into an athletic complex for City use. The complex will include a synthetic turf soccer field, a basketball court, spectator areas, restroom facilities, field lighting, and other amenities. Conceptual plans are included in Appendix A. Construction of the facility would include the installation of new electric, water, and sewer lines to service the new features. Redevelopment work is intended to begin in 2016. The City considers the design with a synthetic turf soccer field to best provide extended use of a playing field with consistently good surface conditions. The City has had good experience with synthetic turf at other fields within the City and possesses the specialized maintenance equipment that can be shared across the various fields. The soccer field at Riverside Park was installed in October 2015, and the three fields at Roosevelt, Normandin, and Lincoln New Bedford public schools were installed in 2001, 2003, and 2010, respectively.

The remedy selected as a result of the Phase III process must restrict exposures to a degree consistent with the future use of the Site as a publically accessible athletic facility. Other than no action and institutional controls alternatives that are included for comparison purposes, the remedial alternatives that achieve MCP Permanent Solution closures for the Nemasket Lots are all based on the same athletic complex concepts with different levels of remediation. Future annual facility maintenance costs and future turf replacement costs are the same for all the Permanent Solution alternatives and are thus not relevant to the comparative evaluation of remedial alternatives in this Phase III Remedial Action Plan.

3.2.4 Identification and Initial Screening of Potential Remedial Action Technologies

Identification of Potential Remedial Action Technologies

The identification process focused on technologies that exhibited the potential to eliminate or significantly reduce exposure to the PCBs, metals, PAHs, and dioxins detected in soil at the Site. The range of technologies includes:

No Action

No Action assumes no additional efforts are undertaken to eliminate potential future exposures to soil impacts at the Site. This alternative would not achieve a Permanent Solution at the Site; however, it has been retained for further detailed evaluation to establish a baseline for comparison of the other remedial actions evaluated.

It should be noted that a condition of No Significant Risk currently exists assuming existing Site controls (i.e., fencing) remain in place. No additional remedial actions would be necessary to achieve a Temporary Solution under the MCP.

Use Restrictions/Institutional Controls

Institutional controls such as an Activity and Use Limitation (AUL) establish restrictions on the use of a site that could otherwise potentially result in exposure to the soil impacts that remain.

Institutional controls are commonly used to maintain a condition of No Significant Risk at sites and are appropriate, where necessary, to control risks associated with potentially accessible soils.

An institutional control in the form of an AUL would not by definition allow for unrestricted future use of this Site. An AUL may be used in conjunction with other remedial alternatives to maintain a condition of No Significant Risk of harm to human health and the environment.

Institutional controls have been retained for consideration in the development of a comprehensive remedial scenario for the Site.

In-situ Treatment

In-situ treatment is an option that involves "in-place" treatment of soil by physical, biological, or chemical processes. The purpose of in-situ treatment is to transfer chemicals to another medium or transform/destroy contaminants to less toxic substances, without the need to excavate the soil first. In-situ treatment eliminates the need to excavate, transport, and dispose of soil off Site and thus does not require fuel consumption for such purposes. The particular technological process selected is usually dictated by the targeted chemical and soil/groundwater conditions.

Thermal in-situ treatment of soils is an effective method of mitigating organic chemicals by increasing their volatilization. By raising the temperature of the soil with heat, organic chemicals will more readily volatilize, and can then be captured and treated as necessary. This is

an energy intensive technology. Organic chemicals are present at the Site, but these chemicals are co-located with inorganic chemicals which do not volatilize. Therefore, this method of treatment cannot address all chemicals of concern (COCs) at the Site.

Vitrification utilizes electrodes inserted into the ground to heat the soil to a liquid state. This technology is energy intensive due to the high electrical power demand. As the soil cools, it will vitrify to a glass-like solid block trapping any and all chemicals. In order to safely perform vitrification, surrounding soils must be dried to prevent the release of steam during the vitrification process. Remedial cost becomes incrementally higher in or near wetlands areas, where the water table is close to grade/zone of treatment. Generally, vitrification has the potential to be unsafe, has a limited history of practical applications, and may result in future land use limitations because the vitrified soil block must be left intact to contain the chemicals.

In-situ chemical oxidation treatment may be an effective method of mitigating organic chemicals. Chemicals with oxidizing properties are introduced to the soil via direct push drilling methods or application with soil augers, then react with and subsequently degrade the chemicals. Chemical oxidation treatment offers little benefit to this Site because it would not address the inorganic COCs.

Physical stabilization of soil by mixing with a stabilization agent like cement can physically bind the COCs into a low permeability solid mass and render them less available for exposure. This technology is less effective for organic compounds.

Due to the lack of any single, practical technology that could potentially treat all co-located, targeted chemicals on Site, in-situ treatment of soil was not retained for further evaluation.

Ex-situ Treatment/Reclamation/Recovery

Ex-situ treatment is an option that involves excavation of soil for treatment by physical, biological, or chemical processes. Ex-situ treatment transfers chemicals to another medium or transforms/destroys chemicals to less toxic compounds. The specific technological process selected is usually dictated by the targeted chemical. Ex-situ treatment may be conducted on Site or off Site. Following treatment, the excavated soil may be returned to the place of origin, or transported to a disposal facility, depending on the success of the treatment in reducing/destroying chemical concentrations.

At this Site, treatment of some metals in soils may be appropriate prior to disposal, depending on disposal characterization sampling, TCLP analysis, and MassDEP requirements listed in *Policy #COMM-97-001: Reuse & Disposal of Contaminated Soil at Massachusetts Landfills*. This technology, therefore, was retained for future consideration.

In addition, some waste materials from the Site could require incineration. The need for this process will depend on facility acceptance requirements for soils targeted for off-site disposal.

Reclamation and recovery is a process of soil washing that scrubs soil to remove and separate the portion of the impacted soil. Contaminants tend to sorb to certain soils such as fine-grained silt

and clay. Silt and clay in turn stick to larger-grained sand and gravel. Soil washing is a process to separate the silt and clay from the larger-grained (clean) soils, which may decrease the overall soil volume requiring disposal. Before soil washing occurs, soil is excavated from the impacted area and the material is sifted to remove large objects such as rocks and debris. The soil is then placed in a scrubbing unit with wash water and sometimes detergent. Output includes wash water that must be treated, impacted soil that must undergo additional treatment or landfilling, and clean soil. There is a potential need for emissions controls as part of the soil washing process.

An alternative ex-situ method is with a solvent-based solution to extract soil-bound compounds. This technology has proven successful with PCBs, but is not designed to treat metals or PAHs.

Commercialization of washing and solvent extraction processes is not yet extensive. The presence of a complex mixture of chemicals such as metals, non-volatile organics, and PAHs present in a heterogeneous matrix makes it difficult to formulate single washing solutions.

The soil washing/solvent extraction technology was not retained for further consideration.

Containment

Containment is an option that involves covering contaminated soils in place to prevent direct contact (exposure barrier), erosion at the soil surface, and in some cases water infiltration. Excavating soil can be difficult depending on site conditions and expensive, particularly when the volume of contaminated soil is large. Capping provides an effective and proven alternative for containment. Capping is generally considered a cost-effective method for managing large volumes of impacted soil and for reducing the energy cost and air emissions associated with equipment and vehicle fuel consumption. Containment measures are designed to isolate chemicals to prevent direct contact, erosion, and depending on the chemicals, leaching.

A containment remedy would utilize a layer of any medium, adequately designed to limit exposures for the given use scenario, and may consist of soil, asphalt, concrete, or synthetic products. A containment remedy, properly designed, installed and maintained, will eliminate or mitigate direct contact with the underlying soils and will address all chemicals. An engineered barrier, as described in MassDEP's 2002 guidance document *Guidance on the Use, Design, Construction, and Monitoring of Engineered Barriers*, could also be an effective method of minimizing exposure risks at the Site, given the particular Site characteristics. Generally, an engineered cap is chosen when implementation of other remedial options becomes unfeasible, after evaluation through a cost-benefit analysis. When containment is selected for a remedial solution, it is typically implemented in conjunction with an institutional control.

Containment is retained as a technology for further consideration in the detailed evaluation.

Removal

Physical removal addresses COCs in soil by physically removing impacted media from the Site for disposal at an off-site facility.

Excavation and off-site disposal is a proven and commonly used method that addresses all soil impacts. To meet requirements of some disposal facilities, pretreatment of the contaminated media may be required. Screening of fill material is sometimes required to remove garbage and other debris. Associated with soil excavation and off-site transportation and disposal is the energy consumption due to the use of fuel for equipment and vehicles and the associated air emissions.

This alternative typically targets smaller soil volumes due to the increased costs associated with excavation, transportation, and disposal fees. In addition, Site restoration would be necessary, thereby further increasing costs.

Impacted soil could be excavated by readily available excavation equipment. However, treatment of excavated soil may be required where concentrations are incompatible with disposal facility acceptance requirements. Pretreatment may be performed on Site, either in-situ or at an adjacent stockpile or staging area, or at the receiving disposal facility.

Removal, on-site treatment, and off-site reuse, recycling, and/or disposal are common methods of soil remediation. Given the proven performance of excavation as a remedial technology at similar sites, this technology has been retained for further evaluation.

3.2.5 Remedial Action Alternatives for Further Evaluation

Through the initial screening evaluation, a limited number of practicable remedial action technologies were identified as potentially viable remedies based on available Site data and TRC experience. TRC then developed conceptual remedial alternatives using the technologies retained for further evaluation. Alternatives Nos. 3, 4, and 5 would result in a Permanent Solution based on the City's planned future use of the Site as a public athletic complex. The conceptual project plan for the athletic complex as currently envisioned are presented in Appendix A. The athletic complex will extend onto the KMS property as illustrated in Appendix A, requiring removal of a portion of the KMS southern parking lot, relocation of a portion of the KMS storm water retention chambers, relocation of the storm water system drain line to Hathaway Street, removal of lighting and fencing in the area, disposal of soil removed to relocate the storm water chambers and relocate the drain line to Hathaway Street, grading, and restoration of KMS areas not part of the athletic complex.

The remedial action alternatives developed from the initial technology screening are as follows:

- **Alternative No. 1 – No Action –** This alternative serves as a baseline for comparison to the other remedial alternatives and would not achieve either a Temporary or Permanent Solution under the MCP.

- **Alternative No. 2 – Maintenance of Existing Site Controls and Implementation of Institutional Controls** – This alternative involves no additional remedial actions. Maintenance of the existing Site controls would be required through implementation of an AUL. This alternative could potentially achieve a Temporary Solution under the MCP; however, it would not support the future use of the Site as an athletic complex. Per

MassDEP's *Guidance on Implementing Activity and Use Limitation*s (Policy #WSC 11-300), "fencing alone, with or without an AUL, is not sufficient or appropriate to prevent direct exposure. However, in combination with other measures that do prevent exposure to OHM, fencing may be an effective and appropriate component of a Permanent Solution." Achieving a Temporary Solution for the Site would require review and approval by the EPA.

- **Alternative No. 3 – Installation of Clean Utility Corridors, Construction of Exposure Barriers (Containment/Capping), and Institutional Controls –** This alternative involves importation of clean fill, installation of clean utility corridors, construction of three types of exposure barriers (synthetic turf system, pavement, and/or soil, depending on location at the Site), and implementation of an AUL. This alternative would achieve a Permanent Solution with Conditions under the MCP and would support the future use of the Site as an athletic complex. This alternative would employ a §761.61(c) approach under TSCA regulations and would require review and approval by the EPA.

- **Alternative No. 4 – Targeted Excavation/Disposal of Soil with PCB Concentrations Greater than 100 mg/kg, Construction of Exposure Barriers (Containment/Capping), and Institutional Controls –** This alternative involves the targeted excavation and off-site disposal of soils in the vicinity of soil samples with PCB concentrations greater than 100 milligrams per kilogram (mg/kg), importation of clean fill, installation of clean utility corridors, construction of three types of exposure barriers (synthetic turf system, pavement, and/or soil, depending on location at the Site), and implementation of an AUL. This alternative would achieve a Permanent Solution with Conditions under the MCP and would support the future use of the Site as an athletic complex. This alternative would employ a §761.61(c) approach under TSCA regulations and would require review and approval by the EPA.

- **Alternative No. 5 – Targeted Excavation/Disposal of Soil with PCBs greater than 10 mg/kg, Construction of Exposure Barriers (Containment/Capping), and Institutional Controls –** This alternative involves the targeted excavation and off-site disposal of soils that exhibit PCB concentrations greater than 10 mg/kg, importation of clean fill, construction of three types of exposure barriers (synthetic turf system, pavement, and/or soil, depending on location at the Site), and implementation of an AUL. This alternative would achieve a Permanent Solution with Conditions under the MCP and would support the future use of the Site as an athletic complex. This alternative would employ a §761.61(c) approach under TSCA regulations and would require review and approval by the EPA.

3.3 Evaluation and Comparison of Comprehensive Remedial Action Alternatives

Descriptions and comparisons of the remedial alternatives are provided below, including a preliminary discussion of compliance with TSCA regulations, where appropriate. Table 2 presents a comparison of key features of each alternative, and Table 3 presents a summary of approximate remedial costs of the alternatives.

Remedial action Alternatives Nos. 3, 4 and 5 could each be advanced to the Phase IV Implementation of the Selected Comprehensive Remedial Alternative (Phase IV) stage of the MCP to support achieving a Permanent Solution with Conditions at the Site. Alternative No. 2 could be utilized to attain a Temporary Solution under the MCP, but it would not support the future use of the Site as an athletic complex; it is included as a basis for comparing the differences between achieving a Temporary Solution versus achieving a Permanent Solution. In addition, including this alternative for comparison with Alternatives Nos. 3 through 5 also illustrates the differences between maintaining the existing Site use scenario (i.e., undeveloped, overgrown, fenced area) and achieving the desired future use of the Site as an athletic complex.

In accordance with 310 CMR 40.0858, remedial action alternatives are evaluated using the following MCP criteria as further described in the notes of Table 2:

- Effectiveness,
- Short-term and long-term reliability,
- Difficulty in implementing,
- Cost,
- Risk,
- Benefits,
- Timeliness, and
- Effects on non-pecuniary interests.

3.3.1 Alternative No. 1 - No Action

The No Action remedial alternative involves no additional remedial actions and represents a baseline for comparison of the other remedial alternatives. The No Action alternative would not result in a Permanent Solution under the MCP and may not prevent potential future exposures to impacted Site media, if the integrity of the fence is not monitored and maintained. A condition of No Significant Risk currently exists at the Site, but the No Action alternative may not meet remedial action objectives and cleanup goals in the future due to reliability concerns. This alternative will not be evaluated further with respect to the comparative evaluation criteria.

3.3.2 Alternative No. 2 - Maintenance of Existing Site Controls and Implementation of Institutional Controls

Alternative No. 2 involves no additional remedial actions; however, maintenance of the existing Site controls would be required through implementation of an AUL. This alternative could potentially reach a Temporary Solution under the MCP but would not achieve TSCA compliance. It would not support the desired future use of the Site as an athletic complex. This alternative is included as a basis for comparing the differences between achieving a Temporary Solution or a Permanent Solution, and for comparing maintaining the existing Site use scenario (i.e., an undeveloped, overgrown, fenced area) with achieving the desired future use of the Site as an athletic complex.

Currently, access to the majority of the Site is restricted by a six-foot high chain-link fence with locked gates, which limits exposure to the impacted soil on Site. If access to the Site can

continue to be limited by this physical access restriction in the future via an AUL, a condition of No Significant Risk would be maintained and Site conditions would meet the remedial action objectives of a Temporary Solution under the MCP.

The condition of the fence would be monitored periodically, and deficiencies addressed.

This alternative would be moderately successful at limiting exposures to contaminants in soil because the Site would remain surrounded by a fence; however, fencing alone is not considered sufficient to restrict direct exposures in perpetuity to achieve a permanent solution per MassDEP *Guidance on Implementing Activity and Use Limitation*s (Policy #WSC 11-300).

This alternative would be comparatively easy to implement. This alternative is not complex in nature, and does not require the availability of materials, equipment, coordination of remedial contractors, or significant financial resources. Periodic monitoring of existing fence conditions would be necessary and repairs to the fence could be made promptly.

Very low risk during implementation would be anticipated because the alternative does not involve excavation, transport, containment, or construction. The risk characterization performed as part of the Phase II CSA has concluded that a condition of No Significant Risk exists under current Site conditions, and fence monitoring and repairs would ensure that future exposures to potential receptors remain restricted.

Benefits gained from this alternative would be high with respect to costs, because a Temporary Solution could be achieved quickly and inexpensively since the alternative does not require any actions other than maintenance of the existing Site controls and implementation of an AUL. However, other benefits from this alternative would be low because the Site would remain an undeveloped, overgrown, fenced parcel which couldn't be utilized by the surrounding community.

Consumption of energy resources and resulting emissions of air pollutants and greenhouse gases would be lowest with this remedial alternative, given that it includes no new remedial activities except implementation of institutional controls and maintenance of the existing fence, neither of which is anticipated to require significant energy resources or produce significant air emissions. Likewise, water use, materials consumption, ecosystem and water resource impacts, and the amount of remedial waste generated, resulting from this remedial alternative would be the lowest of the scenarios evaluated.

TRC estimates a total cost of approximately $39,000 for Alternative No. 2. Environmental inspection/monitoring costs would total approximately $3,000 annually. Specific cost components to reach a Temporary Solution with this alternative are presented in Appendix B.

3.3.3 Alternative No. 3 – Installation of Clean Utility Corridors, Construction of Exposure Barriers (Containment/Capping), and Institutional Controls

Alternative No. 3 consists of the installation of clean utility corridors for new athletic complex utilities, construction of three types of exposure barriers (synthetic turf system, pavement, and/or

soil, depending on location at the Site), and implementation of an AUL. This alternative would employ a §761.61(c) approach under TSCA regulations and would require review and approval by the EPA. Future use of the Site would be as an athletic complex.

3.3.3.1 Permit Requirements

The isolated vegetated wetland at the western side of the Site was previously subject to a Request for Determination of Applicability (RDA) and determined to be a non-jurisdictional wetland according to the Federal Wetland Protection Act (WPA). However, work associated with this remedial alternative (including filling in the isolated vegetated wetland) would occur within the 100-foot buffer zone of the bordering vegetated wetland located to the north of the Site (at the KMS property) to facilitate development of the athletic complex. Therefore, the work would fall under the jurisdiction of the United States Army Corps of Engineers (USACOE) and would also be subject to review by the New Bedford Conservation Commission.

Filling of the isolated vegetated wetland would result in the loss of less than 5,000 square feet of wetland, which would qualify as a Category 1 activity under the USACOE's Massachusetts General Permit. As such, a USACOE Project Notification Form and supporting documentation would be submitted to the Massachusetts Historical Commission and tribal authorities in accordance with the USACOE's Massachusetts General Permit requirements, and a Notice of Intent (NOI) permit application would be prepared and submitted to the New Bedford Conservation Commission.

3.3.3.2 Site Preparation

The Site consists of approximately 1.6 acres of currently filled but undeveloped land that is overgrown with grass, weeds and brush. Initial Site preparation for remediation would include the installation of erosion controls along the Site perimeter. Vegetation would then be cleared so excavation equipment and personnel could safely access the Site. A temporary storage trailer for hand tools, portable facilities, and a dumpster for construction materials waste may be staged on-site. Temporary barriers and police details would be utilized as needed for traffic control.

3.3.3.3 Soil Removal

1. General Excavation for Site Preparation

Topsoil from the vegetated areas of the Site would be removed to improve the geotechnical suitability of the sub-base for the capping systems. On the Nemasket properties, the estimated 6 inches of topsoil is potentially impacted and approximately 2,800 tons would be disposed off-site. Total PCB concentrations are expected to be less than 50 mg/kg, and metals concentrations are expected to require stabilization of approximately 25% of the topsoil. Topsoil removed from the KMS property (part of the existing three-foot clean soil cap) would be segregated and considered suitable for reuse on Site.

2. Excavation for Installation of Clean Utility Corridors

The athletic complex proposed for the Site is planned to include a small building for restrooms, field lighting, and possibly synthetic turf field wetting for temperature control. Construction of these features would require the installation of new electric, water and sewer lines at the Site; the final layout of the new utilities has not yet been determined. In addition, there is an existing utility easement that passes west-east through the Site in which a storm drain, sanitary sewer, and water line are present, as shown on Figure 2.

To facilitate installation of the new utilities associated with the athletic facility and mitigate potential future risk to utility workers, soil within the new electric, water and sewer utility corridors would be removed and replaced with clean backfill material. Excavated soils would be utilized for sub-grading the Site.

In addition, installation of clean utility corridors is proposed for the existing storm drain, sanitary sewer, and water line in the utility easement at the Site, if feasible. However, for the purposes of this Phase III report, it has been assumed that it may not be feasible to install clean utility corridors for the existing utilities within the easement. Specifically, the Risk Evaluations presented as Appendix F of this report for Alternative No. 3 have conservatively assumed that clean corridors are not installed in the existing utility easement, and the estimated volume of backfill required for this remedial alternative does not include backfill associated with installing clean corridors there. Likewise, the total estimated cost for this remedial alternative does not include costs associated with installing clean corridors for the existing storm drain, sanitary sewer, and water line.

Once excavation and removal activities for the clean utility corridors for the new utilities are complete, a geotextile separation fabric would be placed over the sidewalls and bottom of the utility corridor excavations. Following installation of the utility piping and conduit, a brightly-colored demarcation layer would be placed on top of the bedding material installed over the utility piping to provide a visual warning for future activities that may disturb the utilities, and the utility corridors would be backfilled to grade. Backfill materials would be delivered from a clean, off-site source and used as backfill within the clean utility corridors. The quality of the backfill would be documented through characterization analyses performed at a frequency of one suite of analyses performed per borrow source.

3. Removal for Exposure Barrier Construction

To maintain three feet of cover at the edges of the cap, borders of a portion of the Site would be excavated to three feet below grade parallel to the roadways and adjacent properties, and slope inward and upward at a 3:1 slope. Excavated soils would be utilized for grading the sub-grade of the Site. This approach would minimize the volume of excavated soil, while maintaining a suitable grade for the athletic complex.

The portions of the Site adjacent to streets would be excavated first, so that final grades at the Site after installing three feet of clean fill would be flush with the existing elevations at street level.

3.3.3.4 Exposure Barriers

Following area grading activities and the installation of the new electric, water and sewer utilities for the athletic facility building and field lighting, a geotextile separation fabric would be placed over the sub-surface of the Site. A brightly-colored demarcation layer would be placed on top of the first 9 to 12 inches of backfill (depending on the location/exposure barrier) covering the separation fabric to provide a visual warning for future activities that may disturb soil. Approximately 1,500 cubic yards of backfill materials would be delivered from a clean, off-site source to achieve the subgrade elevation, and an additional 2,700 cubic yards would be delivered for the construction of the synthetic turf exposure barrier system. The quality of the backfill would be documented through characterization analyses performed at a frequency of one suite of analyses performed per borrow source.

The synthetic turf system would be constructed consistent with the manufacturer's specifications and in accordance with National Federation of High School standards, and would serve as the exposure barrier for the majority of the Site (i.e., for the soccer field and the adjacent gathering/warm-up and spectator viewing areas). A typical synthetic turf system is approximately 10 to 14 inches thick consisting of a 2.5-inch thick synthetic fiber turf layer (in-filled 1-3/4 inches with sand and rubber) underlain with a minimum of 8 to 12 inches of free draining crushed stone or gravel, an underdrain system to gravity drain water from beneath the field, and a geotextile separation fabric over a graded and compacted existing sub-base soil.

Portions of the Site not covered with synthetic turf would utilize asphalt (basketball court) or concrete (walkways) pavement as the exposure barrier, with the limited unpaved areas (perimeter landscaping) covered with three feet of clean compacted soil as the exposure barrier. In asphalt paved areas, a bituminous wearing layer underlain with a bituminous binder layer, would be placed on top of a sub-base layer of compacted gravel. In concrete sidewalk areas, a concrete layer would be placed on top of a sub-base layer of compacted gravel. See Figure 3 for typical cross-sectional details of capped areas. Refer to Appendix A for the proposed locations of the synthetic turf system, pavement and soil exposure barriers at the Site.

The design of the exposure barriers would be protective of human health and the environment. The exposure barriers would prevent direct contact exposure to impacted soil; erosion and migration of impacted soil off Site; and, for the areas with synthetic turf, upward migration of contaminants into the subsurface drainage system and turf system subsurface gravel/stone. Groundwater is below regulatory thresholds and does not require remedial action, and thus stormwater infiltration would be acceptable. The final design of the exposure barriers will be presented for public and agency review in the MCP Phase IV Remedy Implementation Plan prior to construction.

3.3.3.5 Stormwater Management Considerations

State and local regulations state that post-development peak discharge runoff rates should not exceed pre-development peak discharge rates at development sites. Impervious finish surface cover would be added under this remedial alternative for the construction of paved areas (asphalt basketball court and concrete walkways). However, more than half of the southern end of the existing, paved parking lot at KMS to the north of the Site would be redeveloped and included in the proposed athletic facility (as part of the soccer field); therefore, there would be a net decrease in the total amount of impervious cover for the project area as a whole under this remedial alternative. A portion of the existing KMS stormwater retention system located beneath the southern portion of the KMS parking lot planned to be redeveloped as part of the soccer field would be relocated adjacent to and to the west of the remaining system. Activities performed on the KMS property would need to comport with obligations under the existing AUL for that parcel, the MCP, and MassDEP's January 2000 policy regarding the Construction of Buildings in Contaminated Areas (WSC-00-425).

A preliminary stormwater analysis of pre-development and post-development conditions using the same cover-type comparison method indicates a new stormwater management system would not be necessary at the Site. Should it be determined that a system is needed, it would require additional excavation for installation and the intent would be to reuse the excavated soil as fill on the Site.

Because the Site area is approximately 1.6 acres, a Stormwater Pollution Prevention Plan (SWPPP) would be required during remedy implementation to comply with the EPA's National Pollutant Discharge Elimination System (NPDES) regulations. A Notice of Intent (NOI) would be filed with the EPA prior to construction to obtain coverage under EPA's NPDES General Permit for Stormwater Discharges from Construction Activities.

3.3.3.6 Environmental Monitoring

Environmental monitoring would be conducted throughout the remedial activities to prevent the migration of chemicals by air, dust, stormwater, and vehicles. Dust suppression equipment would also be kept on-site to prevent nuisance dust conditions. Although VOC concentrations above United States Occupational Health and Safety Administration (OSHA) action levels are not anticipated, a photoionization detector (PID) would be utilized as a precaution to monitor VOC concentrations during remedy implementation, along with dust monitoring instrumentation.

3.3.3.7 Implementation of an AUL

An AUL would be implemented in conjunction with this remedial alternative to ensure that future activities that may disturb soils below the exposure barriers are restricted, and that the exposure barriers remain in place and are properly maintained. The AUL would also meet TSCA requirements listed at 40 CFR 761.61(a)(8), but is not expected to require a separate filing/deed notice.

3.3.3.8 Summary

Table 2 provides a comparative summary matrix of remedial action evaluation criteria. Alternative No. 3 would be marginally effective per 310 CMR 40.0858(1) because while it would result in a Permanent Solution under the MCP and support beneficial property use, it does not remove soil with elevated PCB concentrations and is marginally effective under TSCA.

A high degree of certainty exists that Alternative No. 3 would be successful at limiting exposures to chemicals in soil. Remaining impacted soils would be contained by exposure barriers, and potential future exposures to utility workers would be mitigated by the clean utility corridors, with the possible exception of emergency utility workers working within the existing utility easement. Potential risk to emergency (one-day) utility workers within the existing easement has been characterized and determined to represent a condition of No Significant Risk, as discussed in Appendix F. Utility work for longer than one day would be performed under a Health and Safety Plan.

Alternative No. 3 would be the easiest of the Permanent Solution alternatives to implement, but would be more difficult to implement than the No Action or Maintain Existing Controls alternatives. Implementation risk is lower than with Alternative Nos. 4 and 5 since less soil would be excavated and transported for off-site disposal. Per 310 CMR 40.0858(3)(e), as it is assumed that some soil at the Site, if excavated for off-site disposal, could potentially have to be transported larger distances to properly licensed out-of-state landfills or incineration facilities, there is less implementation risk associated with this alternative since this potential lengthy trip would not be necessary.

Monitoring would be conducted to mitigate potential risks during implementation due to chemical migration (dust, erosion, vehicles, etc.). During non-working hours, a security fence would prevent unauthorized access to potentially exposed soils in open excavation areas. Upon completion of the remedial alternative, no significant risk would be associated with remaining impacted soil, due to the exposure barriers and the restrictions imposed by the AUL. Potential future risks related to construction work would be mitigated by adherence to a Soil Management Plan, a Health and Safety Plan, and training stipulated in the AUL.

Consumption of energy resources and resulting emissions of air pollutants and greenhouse gases would be lower with this remedial alternative than with Alternative Nos. 4 and 5, since less soil would be transported off-site for disposal and there would be less backfill transported to the Site. In addition, water use, materials consumption, and ecosystem and water resource impacts resulting from this remedial alternative would be lower than with Alternative Nos. 4 and 5, given no remedial (PCB) excavations or associated management (e.g., stockpiling) of impacted soil would be necessary near the adjacent wetland located north of the Site, and the overall reduced amount of remedial waste that would be generated/managed under this scenario.

This alternative provides the benefit of achieving a Permanent Solution, providing for use of the Site as an athletic complex, and substantially improving aesthetics. The estimated cost of this alternative is approximately $4,300,000. Annual environmental monitoring costs would be

approximately $6,000 per year following Site closure. This alternative would likely take two to three months to implement, not including public comment, permitting, and regulatory review.

3.3.4 Alternative No. 4 – Targeted Excavation/Disposal of Soil with PCB Concentrations Greater than 100 mg/kg, Construction of Exposure Barriers (Containment/Capping), and Institutional Controls

Alternative No. 4 is similar to Alternative No. 3 except that it would also include the targeted excavation and disposal of soils that exhibit total PCB concentrations greater than 100 mg/kg. It includes construction of three exposure barriers (synthetic turf system, pavement, and soil, depending on location at the Site) and implementation of an AUL. This alternative would employ a §761.61(c) approach under TSCA regulations and would require review and approval by the EPA. Future use of the Site would be as an athletic complex.

3.3.4.1 Permit Requirements

The isolated vegetated wetland at the western portion of the Site was previously subject to an RDA and determined to be a non-jurisdictional wetland according to the Federal WPA. However, work associated with this remedial alternative (including filling in the isolated vegetated wetland) would occur within the 100-foot buffer zone of the bordering vegetated wetland located to the north of the Site (at the KMS property) to facilitate development of the athletic complex. Therefore, the work would fall under the jurisdiction of the USACOE and would also be subject to review by the New Bedford Conservation Commission.

Filling of the isolated vegetated wetland would result in the loss of less than 5,000 square feet of wetland, which would qualify as a Category 1 activity under the USACOE's Massachusetts General Permit. As such, a USACOE Project Notification Form and supporting documentation would be submitted to the Massachusetts Historical Commission and tribal authorities in accordance with the USACOE's Massachusetts General Permit requirements, and a NOI permit application would be prepared and submitted to the New Bedford Conservation Commission.

3.3.4.2 Site Preparation

The Site consists of approximately 1.6 acres of currently filled but undeveloped land that is overgrown with grass, weeds and brush. Initial Site preparation for remediation would include the installation of erosion controls along the Site perimeter. Vegetation would then be cleared so excavation equipment and personnel could safely access the Site. A temporary storage trailer for hand tools, portable facilities, and a dumpster for construction materials waste may be staged on site. Temporary barriers and police details would be utilized as needed for traffic control.

3.3.4.3 Soil Removal

1. General Excavation for Site Preparation

Topsoil from the vegetated areas of the Site would be removed to improve the geotechnical suitability of the sub-base for the capping systems. On the Nemasket properties, the estimated 6

inches of topsoil is potentially impacted and approximately 2,800 tons would be disposed off-site. Total PCB concentrations are expected to be less than 50 mg/kg, and metals concentrations are expected to require stabilization of approximately 25% of the topsoil. Topsoil removed on the KMS property (part of the existing three-foot clean soil cap) would be segregated and considered suitable for reuse on site.

2. Targeted Soil Excavation

Nine sampling locations, shown on Figure 4, exhibit elevated total PCB concentrations in soil. To provide a significant reduction in the presence of PCBs on Site, soil with PCB concentrations greater than approximately 100 mg/kg will be targeted for removal. Soil at these locations would be excavated within a 50 square foot area to the depths of concentration reductions based on existing data as indicated on Figure 4 and disposed off Site at a TSCA landfill.

The estimated volume of this targeted soil that would be excavated and disposed off Site under Alternative No. 4 is approximately 140 cubic yards.

3. Removal for Exposure Barrier Construction

To maintain three feet of cover at the edges of the cap, borders of a portion of the Site would be excavated to three feet below grade parallel to the roadways and adjacent properties, and slope inward and upward at a 3:1 slope. Excavated soils would be utilized for grading the sub-grade of the Site. This approach would minimize the volume of excavated soil, while maintaining a suitable grade for the athletic complex.

The portions of the Site adjacent to streets would be excavated first, so that final grades at the Site after installing three feet of clean fill would be flush with the existing elevations at street level.

4. Excavation for Installation of Clean Utility Corridors

The athletic complex proposed for the Site is planned to include a small building for restrooms, field lighting, and possibly synthetic turf field wetting for temperature control. Construction of these features would require the installation of new electric, water and sewer lines at the Site. Clean utility corridors would be installed for the new utilities, and for the existing utilities at the Site, if feasible (as discussed above in Section 3.3.3.3).

It is proposed that soils excavated to facilitate installation of the new utilities would be removed and replaced with clean backfill material. Excavated soils would be utilized as backfill for the targeted soil excavations or used for sub-grading of the Site. No costs have been allocated for characterizing or potentially disposing of soil displaced by the installation of clean utility corridors.

3.3.4.4 Soil Stabilization Treatment

Due to the concentrations of lead observed in some soil samples collected at the Site, select Site

soils would be analyzed by the TCLP method prior to off-site disposal to determine if the soil would be characterized as a hazardous waste upon generation. Soils exhibiting concentrations greater than 20 times the regulatory limit listed in 310 CMR 30.125 Table 1 would be analyzed by the TCLP method. Treatment of the soils may be appropriate prior to off-site disposal based upon the TCLP results. Treatment of soils would consist of manually mixing the soil with a stabilizing agent using an excavator or similar means. Certain waste receiving facilities can perform this treatment at their facilities. Other requirements may apply depending upon available off-site facilities and associated facility acceptance processes.

3.3.4.5 Exposure Barriers

Following Site grading activities and the installation of the new electric, water and sewer utilities for the athletic facility building and field lighting, a geotextile separation fabric would be placed over the sub-surface of the Site. A brightly-colored demarcation layer would be placed on top of the first 9 to 12 inches of backfill (depending on the location/exposure barrier) covering the separation fabric to provide a visual warning for future activities that may disturb soil. Approximately 1,700 cubic yards of backfill materials would be delivered from a clean, off-site source to achieve the subgrade elevation, and an additional 2,700 cubic yards would be delivered for the construction of the synthetic turf exposure barrier system. The quality of the backfill would be documented through characterization analyses performed at a frequency of one suite of analyses performed per borrow source.

The synthetic turf system would be constructed consistent with the manufacturer's specifications and in accordance with National Federation of High School standards, and would serve as the exposure barrier for the majority of the Site (i.e., for the soccer field and the adjacent gathering/warm-up and spectator viewing areas). A typical synthetic turf system is approximately 10 to 14 inches thick consisting of a 2.5-inch thick synthetic fiber turf layer (in-filled 1-3/4 inches with sand and rubber) underlain with a minimum of 8 to 12 inches of free draining crushed stone or gravel, an underdrain system to gravity drain water from beneath the field, and a geotextile separation fabric over a graded and compacted existing sub-base soil.

Portions of the Site not covered with synthetic turf would utilize asphalt (basketball court) or concrete (walkways) pavement as the exposure barrier, with the limited unpaved areas (perimeter landscaping) covered with three feet of clean compacted soil as the exposure barrier. In asphalt paved areas, a bituminous wearing layer underlain with a bituminous binder layer, would be placed on top of a sub-base layer of compacted gravel. In concrete sidewalk areas, a concrete layer would be placed on top of a sub-base layer of compacted gravel. See Figure 3 for typical cross-sectional details of capped areas. Refer to Appendix A for the proposed locations of the synthetic turf system, pavement and soil exposure barriers at the Site.

The design of the exposure barriers would be protective of human health and the environment. The exposure barriers would prevent direct contact exposure to impacted soil; erosion and migration of impacted soil off Site; and, for the areas with synthetic turf, upward migration of contaminants into the subsurface drainage system and turf system subsurface gravel/stone. Groundwater is below regulatory thresholds and does not require remedial action, and thus stormwater infiltration would be acceptable. The final design of the exposure barriers will be

presented for public and agency review in the MCP Phase IV Remedy Implementation Plan prior to construction.

3.3.4.6 Stormwater Management Considerations

State and local regulations state that post-development peak discharge runoff rates should not exceed pre-development peak discharge rates at development sites. Impervious finish surface cover would be added under this remedial alternative for the construction of paved areas (asphalt basketball court and concrete walkways). However, more than half of the southern end of the existing, paved parking lot at KMS to the north of the Site would be redeveloped and included in the proposed athletic facility (as part of the soccer field); therefore, there would be a net decrease in the total amount of impervious cover for the project area as a whole under this remedial alternative. A portion of the existing KMS stormwater retention system located beneath the southern portion of the KMS parking lot planned to be redeveloped as part of the soccer field would be relocated adjacent to and to the west of the remaining system. Activities performed on the KMS property would need to comport with obligations under the existing AUL for that parcel, the MCP, and MassDEP's January 2000 policy regarding the Construction of Buildings in Contaminated Areas (WSC-00-425).

A preliminary stormwater analysis of pre-development and post-development conditions using the same cover-type comparison method indicates a new stormwater management system would not be necessary at the Site. Should it be determined that a system is needed, it would require additional excavation for installation and the intent would be to reuse the excavated soil as fill on the Site.

Because the Site area is approximately 1.6 acres, a SWPPP would be required during remedy implementation to comply with the EPA's NPDES regulations. A Notice of Intent (NOI) would be filed with the EPA prior to construction to obtain coverage under EPA's NPDES General Permit for Stormwater Discharges from Construction Activities.

3.3.4.7 Environmental Monitoring

Environmental monitoring would be conducted throughout the remedial activities to prevent the migration of chemicals by air, dust, stormwater, and vehicles. Dust suppression equipment would also be kept on-site to prevent nuisance dust conditions. Although VOC concentrations above OSHA action levels are not anticipated, a PID would be utilized as a precaution to monitor VOC concentrations during remedy implementation, along with dust monitoring instrumentation.

3.3.4.8 Implementation of an AUL

An AUL would be implemented in conjunction with this remedial alternative to ensure that future activities that may disturb soils below the exposure barriers are restricted, and that the exposure barriers remain in place and are properly maintained. The AUL would also meet TSCA requirements listed at 40 CFR 761.61(a)(8), but is not expected to require a separate filing/deed notice.

3.3.4.9 Summary

Table 2 provides a comparative summary matrix of remedial action evaluation criteria. Alternative No. 4 would have good effectiveness per 310 CMR 40.0858(1) because:

1. It would result in a Permanent Solution under the MCP and support beneficial property use;
2. Soil on the Site with elevated concentrations of PCBs would be removed, and;
3. Overall chemical concentrations at the Site would be reduced.

A high degree of certainty exists that this alternative would be successful at limiting exposures to chemicals in soil. Soil with elevated PCB concentrations would be removed and remaining soils would be separated by exposure barriers. Potential risk to emergency (one-day) utility workers within the existing easement has been characterized and determined to represent a condition of No Significant Risk, as discussed in Appendix C. Utility work for longer than one day would be performed under a Health and Safety Plan.

Alternative No. 4 would be moderately difficult to implement. Lower implementation risk is associated with this alternative than with Alternative No. 5, given the significantly lower volume of soil excavated for off-site disposal under this alternative. Similarly, there is a slightly higher implementation risk associated with this alternative than with Alternative No. 3, due to the small additional quantity of soil excavated from the Site that would have to be transported larger distances to properly licensed out-of-state landfills or incineration facilities.

Monitoring would be conducted during remedy implementation to mitigate potential risks during implementation due to chemical migration (dust, erosion, vehicles, etc.). During non-working hours, a security fence would prevent unauthorized access to potentially exposed soils in open excavation areas. Upon completion of the remedial alternative, low risk would be associated with remaining impacted soil, due to the exposure barriers and the restrictions imposed by the AUL. Potential future risks related to construction work would be mitigated by adherence to a Soil Management Plan, a Health and Safety Plan, and training stipulated in the AUL.

Consumption of energy resources and resulting emissions of air pollutants and greenhouse gases would be slightly higher with this remedial alternative than with Alternative No. 3 and lower than that with Alternative No. 5, since a limited amount of impacted soil would be excavated and transported off Site for disposal and replaced with backfill transported to the Site. Similarly, water use, materials consumption, and ecosystem and water resource impacts resulting from this remedial alternative would be slightly higher than with Alternative No. 3 and significantly lower than Alternative No. 5, given the limited number of remedial excavations and associated management of impacted soil that would be conducted near the wetland north of the Site, and the slight increase in the amount of remedial waste that would be transported for off-site disposal under this Alternative 4.

Alternative No. 4 provides the benefit of achieving a Permanent Solution, providing for use of the Site as an athletic complex, and improving aesthetics. The estimated cost of this alternative is approximately $4,400,000. . Annual monitoring costs would be approximately $6,000 per

year following Site closure. This alternative would likely take two to three months to implement, not including public comment, permitting, and regulatory review.

3.3.5 Alternative No. 5 – Targeted Excavation/Disposal of Soil with PCBs greater than 10 mg/kg, Construction of Exposure Barriers (Containment/Capping), and Institutional Controls

Alternative No. 5 is similar to Alternative No. 4 except that it would also include targeted excavation and off-site disposal of soils that exhibit total PCB concentrations greater than 10 mg/kg. It includes construction of three exposure barriers (synthetic turf system, pavement and soil), and implementation of an AUL. Future use of the Site would be as an athletic complex.

3.3.5.1 Permit Requirements

The isolated vegetated wetland at the western side of the Site was previously subject to an RDA and determined to be a non-jurisdictional wetland according to the Federal WPA. However, work associated with this remedial alternative (including filling in the isolated vegetated wetland) would occur within the 100-foot buffer zone of the bordering vegetated wetland located to the north of the Site (at the KMS property) to facilitate development of the athletic complex. Therefore, the work would fall under the jurisdiction of the USACOE, and would also be subject to review by the New Bedford Conservation Commission.

Filling of the isolated vegetated wetland would result in the loss of less than 5,000 square feet of wetland, which would qualify as a Category 1 activity under the USACOE's Massachusetts General Permit. As such, a USACOE Project Notification Form and supporting documentation would be submitted to the Massachusetts Historical Commission and tribal authorities in accordance with the USACOE's Massachusetts General Permit requirements, and a NOI permit application would be prepared and submitted to the New Bedford Conservation Commission.

3.3.5.2 Site Preparation

The Site consists of 1.6 acres of currently filled but undeveloped land that is overgrown with grass, weeds and brush. Initial Site preparation would include the installation of erosion controls along the Site perimeter. Vegetation would then be cleared so excavation equipment and personnel could safely access the Site. A temporary storage trailer for hand tools, portable facilities, and a dumpster for construction materials waste may be staged on Site. Temporary barriers and police details would be utilized as needed for traffic control.

3.3.5.3 Soil Removal

1. General Excavation for Site Preparation

Topsoil from the vegetated areas of the Site would be removed to improve the geotechnical suitability of the sub-base for the capping systems. On the Nemasket properties, the estimated 6 inches of topsoil is potentially impacted and approximately 2,800 tons would be disposed off-site. Total PCB concentrations are expected to be less than 50 mg/kg, and metals concentrations

are expected to require stabilization of approximately 25 percent of the topsoil. Topsoil removed on the KMS property (part of the existing three-foot clean soil cap) would be segregated and considered suitable for reuse on Site.

2. Targeted Soil Excavation

Five areas and 15 spot locations exhibiting total PCB concentrations greater than 10 mg/kg have been identified at the Site, as shown on Figure 5. These locations would be excavated, and the soil disposed off Site.

The estimated total volume of soil that would be excavated and disposed off Site under Alternative No. 5 is approximately 4,080 cubic yards based on existing data and approximate excavation boundaries subject to verification sampling per TSCA Subpart O. However, a relatively high degree of uncertainty exists in this regard, and it is likely that the final excavation volume would be significantly higher. The anticipated potential increase in excavation volume is due to increases in the size of the excavations associated with initial verification sample results greater than the 10 mg/kg PCB action level necessitating additional soil excavation to achieve the remedial objective.

3. Removal for Exposure Barrier Construction

To maintain three feet of cover at the edges of the cap, borders of a portion of the Site would be excavated to three feet below grade parallel to the roadways and adjacent properties, and slope inward and upward at a 3:1 slope. Excavated soils would be utilized for grading the sub-grade of the Site. This approach would minimize the volume of excavated soil, while maintaining a suitable grade for the athletic complex.

The portions of the Site adjacent to streets would be excavated first, so that final grades at the Site after installing three feet of clean fill would be flush with the existing elevations at street level.

4. Excavation for Installation of Clean Utility Corridors

The athletic complex proposed for the Site is planned to include a small building for restrooms, field lighting, and possibly synthetic turf field wetting for temperature control. Construction of these features would require the installation of new electric, water and sewer lines at the Site. Clean utility corridors would be installed for the new utilities, and for the existing storm drain, sanitary sewer, and water line in the easement at the Site, if feasible (as discussed above in Section 3.3.3.3).

It is proposed that soils excavated to facilitate installation of the new utilities would be removed and replaced with clean backfill material. Excavated soils would be utilized as backfill for the targeted soil excavations or used for sub-grading of the Site. No costs have been allocated for characterizing or potentially disposing of soil displaced by the installation of clean utility corridors.

3.3.5.4 Soil Stabilization Treatment

Due to the concentrations of lead observed in some soil samples collected at the Site, select Site soils would be analyzed by the TCLP method prior to off-site disposal. Soils exhibiting concentrations greater than 20 times the regulatory limit listed in 310 CMR 30.125 Table 1 would be analyzed by the TCLP method. Treatment of the soils may be appropriate prior to off-site disposal based upon the TCLP results. Treatment of soils would consist of manually mixing the soil with a stabilizing agent using an excavator or similar means. Certain waste receiving facilities can perform this treatment at their facilities. Other requirements may apply depending upon available off-site facilities and associated facility acceptance processes.

3.3.5.5 Exposure Barriers

Following excavation and removal activities, Site grading work, and the installation of the new electric, water and sewer utilities for the building and field lighting associated with the athletic facility, a geotextile separation fabric would be placed in the PCB excavation areas and over the sub-surface of the remainder of the Site. A brightly-colored demarcation layer would be placed on top of the first 9 to 12 inches of backfill (depending on the location/exposure barrier) covering the separation fabric to provide a visual warning for future activities that may disturb soil. Approximately 5,600 cubic yards of backfill materials would be delivered from a clean, off-site source to achieve the subgrade elevation, and an additional 2,700 cubic yards would be delivered for the construction of the synthetic turf exposure barrier system. The quality of the backfill would be documented through characterization analyses performed at a frequency of one suite of analyses performed per borrow source.

The synthetic turf system would be constructed consistent with the manufacturer's specifications and in accordance with National Federation of High School standards, and would serve as the exposure barrier for the majority of the Site (i.e., for the soccer field and the adjacent gathering/warm-up and spectator viewing areas). A typical synthetic turf system is approximately 10 to 14 inches thick consisting of a 2.5-inch thick synthetic fiber turf layer (in-filled 1-3/4 inches with sand and rubber) underlain with a minimum of 8 to 12 inches of free draining crushed stone or gravel, an underdrain system to gravity drain water from beneath the field, and a geotextile separation fabric over a graded and compacted existing sub-base soil.

Portions of the Site not covered with synthetic turf would utilize asphalt (basketball court) or concrete (walkways) pavement as the exposure barrier, with the limited unpaved areas (perimeter landscaping) covered with three feet of clean compacted soil as the exposure barrier. In asphalt paved areas, a bituminous wearing layer underlain with a bituminous binder layer, would be placed on top of a sub-base layer of compacted gravel. In concrete sidewalk areas, a concrete layer would be placed on top of a sub-base layer of compacted gravel. See Figure 3 for typical cross-sectional details of capped areas. Refer to Appendix A for the proposed locations of the synthetic turf system, pavement and soil exposure barriers at the Site.

The design of the exposure barriers would be protective of human health and the environment. The exposure barriers would prevent direct contact exposure to impacted soil; erosion and migration of impacted soil off Site; and, for the areas with synthetic turf, upward migration of

contaminants into the subsurface drainage system and turf system subsurface gravel/stone. Groundwater is below regulatory thresholds and does not require remedial action, and thus stormwater infiltration would be acceptable. The final design of the exposure barriers will be presented for public and agency review in the MCP Phase IV Remedy Implementation Plan prior to construction.

3.3.5.6 Stormwater Management Considerations

State and local regulations state that post-development peak discharge runoff rates should not exceed pre-development peak discharge rates at development sites. Impervious finish surface cover would be added under this remedial alternative for the construction of paved areas (asphalt basketball court and concrete walkways). However, more than half of the southern end of the existing, paved parking lot at KMS to the north of the Site would be redeveloped and included in the proposed athletic facility (as part of the soccer field); therefore, there would be a net decrease in the total amount of impervious cover for the project area as a whole under this remedial alternative. A portion of the existing KMS stormwater retention system located beneath the southern portion of the KMS parking lot planned to be redeveloped as part of the soccer field would be relocated adjacent to and to the west of the remaining system. Activities performed on the KMS property would need to comport with obligations under the existing AUL for that parcel, the MCP, and MassDEP's January 2000 policy regarding the Construction of Buildings in Contaminated Areas (WSC-00-425).

A preliminary stormwater analysis of pre-development and post-development conditions using the same cover-type comparison method indicates a new stormwater management system would not be necessary at the Site. Should it be determined that a system is needed, it would require additional excavation for installation and the intent would be to reuse the excavated soil as fill on the Site.

Because the Site area is approximately 1.6 acres, a SWPPP would be required during remedy implementation to comply with the EPA's NPDES regulations. A Notice of Intent (NOI) would be filed with the EPA prior to construction to obtain coverage under EPA's NPDES General Permit for Stormwater Discharges from Construction Activities.

3.3.5.7 Environmental Monitoring

Environmental monitoring would be conducted throughout the remedial activities to prevent the migration of chemicals by air, dust, stormwater, and vehicles. Dust suppression equipment would also be kept on Site, should nuisance conditions arise. Although VOC concentrations above OSHA action levels are not anticipated, a PID would be utilized as a precaution to monitor VOC concentrations during remedy implementation, in addition to dust monitoring instrumentation.

3.3.5.8 Implementation of an AUL

An AUL would be implemented in conjunction with this remedial alternative to ensure that future activities that may disturb soils below the exposure barriers are restricted, and that the

exposure barriers remain in place and are properly maintained. The AUL would also meet TSCA requirements listed at 40 CFR 761.61(a)(8), but is not expected to require a separate filing or deed notice.

3.3.5.9 Summary

Table 2 provides a comparative summary matrix of remedial action evaluation criteria. This remedial action alternative would have good effectiveness per 310 CMR 40.0858(1) because:

1. It would result in a Permanent Solution under the MCP and support beneficial property reuse;
2. Soil impacts in select areas of the Site would be removed, and;
3. Overall chemical concentrations at the Site would be greatly reduced.

A high degree of certainty exists that this alternative would be successful at limiting exposures to chemicals in soil. Soil with PCB concentrations greater than 10 mg/kg would be removed and remaining soils would be separated by exposure barriers. Although it has not been definitively assessed for this alternative (the high cost makes it an improbable alternative), it is expected that the potential risk to emergency (one-day) utility workers within the existing easement would represent a condition of No Significant Risk due to the large soil removals as compared to other alternatives. Utility work for longer than one day would be performed under a Health and Safety Plan.

This alternative would be relatively difficult to implement. Higher implementation risk is associated with this alternative than with Alternative No. 4, given the significantly higher volume of soil excavated for off-site disposal under with this alternative, and the higher likelihood that some of the soil would have to be transported large distances to properly licensed out-of-state landfills or incineration facilities.

Monitoring would be conducted during remedy implementation to mitigate potential risks during implementation due to chemical migration (dust, erosion, vehicles, etc.). During non-working hours, a security fence would prevent unauthorized access to potentially exposed soils in open excavation areas. Upon completion of the remedial alternative, low risk would be associated with remaining impacted soil, due to the exposure barriers and the restrictions imposed by the AUL. Future risks related to construction work could be mitigated by adherence to a Soil Management Plan and Health and Safety Plan, and training.

Consumption of energy resources and resulting emissions of air pollutants and greenhouse gases would be significantly higher with this remedial alternative than with Alternative Nos. 3 and 4, since a relatively large volume of impacted soil would be excavated and transported off-site for disposal and replaced with backfill transported to the Site. Water use, materials consumption, and ecosystem and water resource impacts resulting from this remedial alternative would also be higher than with Alternative Nos. 3 and 4, given the larger extent of the remedial excavations conducted (including those near the wetland to the north of the Site) and associated increase in soil management activities, as well as the much larger amount of remedial waste that would be transported off-site for disposal under this alternative.

This alternative provides the benefit of achieving a Permanent Solution, providing for use of the Site as an athletic complex, and improving aesthetics. The estimated cost of this alternative is approximately $5,800,000. Annual monitoring costs would be approximately $6,000 per year following Site closure. This alternative would likely take three to four months to implement, not including public comment, permitting, and regulatory review.

3.4 Selection of Remedial Action Alternative

In addition to the No Action alternative, four remedial alternatives were evaluated for addressing potential risks associated with impacts in soil at the Site. One alternative was identified as potentially able to achieve a Temporary Solution, while three alternatives were identified as being potentially able to achieve a Permanent Solution with Conditions. Each alternative was evaluated with consideration given to the comparative evaluation criteria per 310 CMR 40.0858 (effectiveness, reliability, difficulty of implementation, cost, risks, benefits, and timeliness).

A remedy which would achieve a Permanent Solution for the Site and support its beneficial future use as an athletic complex is desired by the City. Therefore, Alternative No. 2, which could only achieve a Temporary Solution and would maintain the existing Site use scenario (i.e., undeveloped, overgrown, fenced area) rather than attaining the desired future use of the Site as an athletic complex, was determined to be inappropriate and has been removed from further consideration.

Of the alternatives that would provide for a Permanent Solution, Alternative No. 4 could be implemented relatively easily, quickly, and cost-effectively, and would offer better compliance with TSCA than Alternative No. 3 for minimal cost increase. Alternative No. 3 is marginally acceptable under TSCA, and Alternative No. 5 is significantly more expensive with minimal increased benefit. Therefore, Alternative No. 4 is selected as the preferred remedy.

3.5 Risk Evaluation

The Nemasket Street Lots (including the utility easement along the northern boundary) will be entirely covered with the athletic field surface or other exposure barriers, newly-installed utilities will be in clean utility corridors, and an Activity and Use Limitation will be implemented to manage soils located below the athletic field or other exposure barriers, thereby preventing soil exposure to all receptors except for the utility worker in the existing Nemasket Street easement and potentially shallow groundwater within the clean utility corridors. The existing Nemasket Street utility easement contains a storm drain, sanitary sewer, and water line located approximately 8, 7, and 10 feet below ground surface, respectively.

A Method 3 risk evaluation for the utility worker scenario was prepared to evaluate the anticipated post-remediation conditions for Alternative No. 4, removal of soil at locations with elevated PCB concentrations, installation of clean utility corridors except within the existing utility easement, and construction of exposure barriers to support the future use of the Site as an athletic complex. The risk evaluation concluded the following:

- For Alternative No. 4, a condition of No Significant Risk exists for the one-day emergency utility worker exposed to soil and groundwater at the existing utility easement for both the 0 to 6 and 0 to 15 foot soil intervals; and
- A condition of No Significant Risk exists for the 130-day utility worker exposed to groundwater only while working within the clean utility corridors.

Although installation of clean utility corridors for the existing storm drain, sanitary sewer, and water line in the utility easement at the Site is being considered by the City, the risk evaluation has conservatively assumed that clean corridors are not installed for these existing utilities. Details of the risk evaluation for Alternative No. 4 are included in Appendix C.

3.6 Schedule

Per 310 CMR 40.0861(2)(i), a projected schedule for submittal of the Permanent Solution Statement for the Site is as follows:

- Initiate Remediation Work — Summer 2016
- Submit Permanent Solution Statement — Winter 2016/2017

4.0 FEASIBILITY ANALYSES

A Feasibility Evaluation was completed in accordance with 310 CMR 40.0860 and MassDEP's *Conducting Feasibility Assessments Under the MCP* (Policy #WSC-04-160).

The remedy selected for the Site will achieve a Permanent Solution; however, it will not reduce soil impacts at the Site to levels that approach or achieve background conditions. An evaluation of the feasibility of approaching or achieving background conditions at the Site is presented below.

4.1 Feasibility of Approaching or Achieving Background Conditions

Soil impacts at the approximately 1.6-acre Site are widespread and attributable to fill materials placed via historical disposal/filling practices. The Method 3 risk evaluation performed for the remedial alternative selected for the Site (Appendix C) has demonstrated that the remedy will result in a condition of No Significant Risk for soil at the Site under current and future Site use scenarios, given certain potential Site uses will be restricted by an AUL implemented following the completion of remedial Site work. The Method 3 risk evaluation has also demonstrated that a condition of No Significant Risk exists for groundwater at the Site.

It is TRC's opinion that approaching or achieving background conditions at the Site is not feasible for the following reasons:

- **Infeasibility - Persistent Impacts in S-2 or S-3 Soils -** Soil at the Site is primarily impacted by PCBs, PAHs and metals, which are defined as persistent compounds in Table 9-1 of MassDEP Policy #WSC-04-160. According to Section 9.3.2.4 of this policy, achieving or approaching background can be deemed infeasible for persistent contaminants in soil located in areas with lower exposure potential (i.e., S-2 and S-3 soil categories). The remedy selected for the Site includes capping to restrict potential exposures and an AUL to limit potential Site uses, and soil at the Site following completion of the remedy will be classified as categories S-2 and S-3. Therefore, conducting additional remedial actions to approach or achieve background conditions for soil is considered infeasible.

- **Persistent and Non-Persistent Groundwater Impacts -** Concentrations of both persistent and non-persistent chemicals in groundwater at the Site are significantly less than ½ the applicable MCP Method 1 GW-1, GW-2 and GW-3 standards. Therefore, according to Section 9.3.3.2 of MassDEP Policy #WSC-04-160, groundwater conditions are considered to be "approaching background".

- **Substantial and Disproportionate Costs to the Incremental Benefit -** The costs associated with approaching or achieving background for soil at the Site would be more than 20-percent higher than the costs incurred to remediate to a condition of No Significant Risk. As such, the costs to remediate to background are considered "substantial and disproportionate" to the incremental benefit that would be gained from conducting additional remedial actions. Therefore, the benefit-cost evaluation applied

per Section 9.3.3.4 of MassDEP Policy #WSC-04-160 indicates conducting additional remedial actions can be considered infeasible.

Given that the remedy selected for the Site will result in a condition of No Significant Risk for current and future use Site scenarios, and in light of the reasons provided above, TRC is of the opinion that approaching or achieving background conditions for soil at the Site is not feasible.

4.2 Upper Concentration Limits

Exposure point concentrations of oil and/or hazardous materials at the Site do not exceed MCP upper concentration limits.

4.3 Critical Exposure Pathways

There are no critical exposure pathways at the Site.

4.4 Sources of Oil and/or Hazardous Materials

There are no known sources of oil and/or hazardous materials, as defined at 310 CMR 40.0006, at the Site.

5.0 RESPONSIBILE PARTY CERTIFICATION [40 CFR 761.61(A)(3)(E)]

This Modified Phase III Remedial Action Plan satisfies the requirements for a TSCA Risk-Based Work Plan pursuant to 40 CFR §761.61(c).

The responsible party certification required per 40 CFR §761.61(a)(3)(i)(E) is provided below.

5.1 Responsible Party Certification

I, Michele Paul, as an authorized representative of the City of New Bedford, the party conducting the remediation of the Nemasket Street Lots in New Bedford, Massachusetts, hereby certify that: all sampling plans, sample collection procedures, sample preparation procedures, extraction procedures, and instrumental/chemical analysis procedures used to assess or characterize the PCB contamination at the Site, are on file at TRC Environmental Corporation at 650 Suffolk Street, Lowell Massachusetts, and are available for EPA inspection.

Signed: _____

Title: Director – Department of Environmental Stewardship

Date: 2/29/16

6.0 PUBLIC INVOLVEMENT

Per 310 CMR 40.1403(3)(e), the Mayor and the Board of Health for the City of New Bedford were provided a copy of the summary and findings and statement of conclusions of this Modified Phase III Remedial Action Plan. Copies of the notification letters are provided in Appendix D.

7.0 PHASE III COMPLETION STATEMENT AND LSP OPINION

This Modified Phase III Remedial Action Plan was completed in accordance with the requirements of 310 CMR 40.0850 and the performance standards of 310 CMR 40.0853. Pursuant to 310 CMR 40.0862(3), it is the opinion of the LSP overseeing this Modified Phase III Remedial Action Plan that the selected remedial action alternative is likely to achieve a Permanent Solution for the Nemasket Street Lots.

The LSP overseeing preparation of this Modified Phase III Remedial Action Plan is:

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

David M. Sullivan

2/29/16

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

Date

Stamp

TABLES

Table 1
Summary of Soil Analytical Results for Site Investigations Not Included in Phase II CSA Report
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:					SB NM 40	SB NM 41	SB NM 42	SB NM 43		P-021-EW1	P-029_EW1	P-029-EW2
		Sample Depth (ft.):					0-1.5	0-1.5	0-1.5	0-1	0-1	0-3	0-3	0-3
		Sample Date:					6/1/2012	6/1/2012	6/1/2012	6/1/2012	6/1/2012 Field Dup	12/15/2010	11/23/2010	12/15/2010
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3	RC S-1**								
VOCs														
(mg/kg)	Acetone	50	400	50	400	6	0.078 U	0.087 U	0.085 U	0.089 U	0.085 U	NA	NA	NA
	tert-Amyl Methyl Ether (TAME)	NS	NS	NS	NS	NS	0.00078 U	0.00087 U	0.00085 U	0.00089 U	0.00085 U	NA	NA	NA
	Benzene	40	40	200	200	2	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	Bromobenzene	NS	NS	NS	NS	100	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	Bromochloromethane	NS	NS	NS	NS	NS	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	Bromodichloromethane	0.1	30	0.1	100	0.1	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	Bromoform	1	300	1	800	0.1	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	Bromomethane	0.5	30	0.5	30	0.5	0.0078 U	0.0087 U	0.0085 U	0.0089 U	0.0085 U	NA	NA	NA
	2-Butanone (MEK)	50	400	50	400	4	0.031 U	0.035 U	0.034 U	0.036 U	0.034 U	NA	NA	NA
	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	100(1)	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	100(1)	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	tert-Butylbenzene	100(1)	100(1)	500(1)	500(1)	100(1)	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	tert-Butyl Ethyl Ether (TBEE)	NS	NS	NS	NS	NS	0.00078 U	0.00087 U	0.00085 U	0.00089 U	0.00085 U	NA	NA	NA
	Carbon Disulfide	NS	NS	NS	NS	100	0.0047 U	0.0052 U	0.0051 U	0.0053 U	0.0051 U	NA	NA	NA
	Carbon Tetrachloride	5	30	5	100	5	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	Chlorobenzene	3	100	3	100	1	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	Chlorodibromomethane	0.03	20	0.03	100	0.005	0.00078 U	0.00087 U	0.00085 U	0.00089 U	0.00085 U	NA	NA	NA
	Chloroethane	NS	NS	NS	NS	100	0.0078 U	0.0087 U	0.0085 U	0.0089 U	0.0085 U	NA	NA	NA
	Chloroform	0.2	500	0.2	1000	0.2	0.0031 U	0.0035 U	0.0034 U	0.0036 U	0.0034 U	NA	NA	NA
	Chloromethane	NS	NS	NS	NS	100	0.0078 U	0.0087 U	0.0085 U	0.0089 U	0.0085 U	NA	NA	NA
	2-Chlorotoluene	NS	NS	NS	NS	100	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	4-Chlorotoluene	NS	NS	NS	NS	100	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	1,2-Dibromo-3-chloropropane (DBCP)	NS	NS	NS	NS	10	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	1,2-Dibromoethane (EDB)	0.1	1	0.1	5	0.1	0.00078 U	0.00087 U	0.00085 U	0.00089 U	0.00085 U	NA	NA	NA
	Dibromomethane	NS	NS	NS	NS	500	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	1,2-Dichlorobenzene	100	300	100	300	9	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	1,3-Dichlorobenzene	100	100	200	500	3	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	1,4-Dichlorobenzene	1	80	1	400	0.7	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	Dichlorodifluoromethane (Freon 12)	NS	NS	NS	NS	1,000	0.0078 U	0.0087 U	0.0085 U	0.0089 U	0.0085 U	NA	NA	NA
	1,1-Dichloroethane	9	500	9	1,000	0.4	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	1,2-Dichloroethane	0.1	20	0.1	100	0.1	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	1,1-Dichloroethylene	40	500	40	1,000	3	0.0031 U	0.0035 U	0.0034 U	0.0036 U	0.0034 U	NA	NA	NA
	cis-1,2-Dichloroethylene	0.1	100	0.1	500	0.1	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	trans-1,2-Dichloroethylene	1	500	1	1,000	1	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	1,2-Dichloropropane	0.1	30	0.1	100	0.1	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	1,3-Dichloropropane	NS	NS	NS	NS	500	0.00078 U	0.00087 U	0.00085 U	0.00089 U	0.00085 U	NA	NA	NA
	2,2-Dichloropropane	NS	NS	NS	NS	NS	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	1,1-Dichloropropene	NS	NS	NS	NS	NS	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	cis-1,3-Dichloropropene	0.4(2)	20(2)	0.4(2)	90(2)	0.01(2)	0.00078 U	0.00087 U	0.00085 U	0.00089 U	0.00085 U	NA	NA	NA
	trans-1,3-Dichloropropene	0.4(2)	20(2)	0.4(2)	90(2)	100	0.00078 U	0.00087 U	0.00085 U	0.00089 U	0.00085 U	NA	NA	NA
	Diethyl Ether	NS	NS	NS	NS	100	0.0078 U	0.0087 U	0.0085 U	0.0089 U	0.0085 U	NA	NA	NA
	Diisopropyl Ether (DIPE)	NS	NS	NS	NS	0.2	0.00078 U	0.00087 U	0.00085 U	0.00089 U	0.00085 U	NA	NA	NA
	1,4-Dioxane	6	20	6	90	40	0.078 U	0.087 U	0.085 U	0.089 U	0.085 U	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	30	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	Hexachlorobutadiene	30	30	100	100	100	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	2-Hexanone (MBK)	NS	NS	NS	NS	1000	0.016 U	0.017 U	0.017 U	0.018 U	0.017 U	NA	NA	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	100	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	0.1	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	Methyl tert-Butyl Ether (MTBE)	100	100	100	500	0.1	0.0031 U	0.0035 U	0.0034 U	0.0036 U	0.0034 U	NA	NA	NA
	Methylene Chloride	4	400	4	700	0.4	0.0078 U	0.0087 U	0.0085 U	0.0089 U	0.0085 U	NA	NA	NA
	4-Methyl-2-pentanone (MIBK)	50	400	50	400	4	0.016 U	0.017 U	0.017 U	0.018 U	0.017 U	NA	NA	NA
	Naphthalene	20	500	20	1,000	100	0.0031 U	0.0035 U	0.0034 U	0.0036 U	0.0034 U	NA	NA	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	3	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	Styrene	4	70	4	300	0.1	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	1,1,1,2-Tetrachloroethane	0.1	80	0.1	400	0.005	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	1,1,2,2-Tetrachloroethane	0.02	10	0.02	50	1	0.00078 U	0.00087 U	0.00085 U	0.00089 U	0.00085 U	NA	NA	NA
	Tetrachloroethylene	10	30	10	200	500	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	Tetrahydrofuran	NS	NS	NS	NS	30	0.0078 U	0.0087 U	0.0085 U	0.0089 U	0.0085 U	NA	NA	NA

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		Sample Depth (ft.):					0-1.5	0-1.5	0-1.5	0-1	0-1	0-3	0-3	0-3
		Sample Date:					6/1/2012	6/1/2012	6/1/2012	6/1/2012	6/1/2012 Field Dup	12/15/2010	11/23/2010	12/15/2010
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3	RC S-1**								
	Toluene	500	500	1,000	1,000	30	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	1,2,3-Trichlorobenzene	NS	NS	NS	NS	NS	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	1,2,4-Trichlorobenzene	6	700	6	3000	2	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	1,1,1-Trichloroethane	500	500	600	1,000	30	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	1,1,2-Trichloroethane	2	40	2	200	0.1	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	Trichloroethylene	0.3	30	0.3	60	0.3	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	Trichlorofluoromethane (Freon 11)	NS	NS	NS	NS	1,000	0.0078 U	0.0087 U	0.0085 U	0.0089 U	0.0085 U	NA	NA	NA
	1,2,3-Trichloropropane	NS	NS	NS	NS	100	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	1,000	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	10	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
	Vinyl Chloride	0.7	1	0.7	7	0.7	0.0078 U	0.0087 U	0.0085 U	0.0089 U	0.0085 U	NA	NA	NA
	m+p Xylene	100	500	100	1,000	100	0.0031 U	0.0035 U	0.0034 U	0.0036 U	0.0034 U	NA	NA	NA
	o-Xylene	100	500	100	1,000	100	0.0016 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	NA	NA	NA
VPH														
(mg/kg)	C5-C8 Aliphatics	100	100	500	500	100	19 U	18 U	18 U	16 U	14 U	NA	NA	NA
	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	1,000	19 U	18 U	18 U	16 U	14 U	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	100	19 U	18 U	18 U	16 U	14 U	NA	NA	NA
	Benzene	40	40	200	200	2	0.094 U	0.090 U	0.091 U	0.078 U	0.072 U	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	40	0.094 U	0.090 U	0.091 U	0.078 U	0.072 U	NA	NA	NA
	Methyl tert-Butyl Ether (MTBE)	100	100	100	500	0.1	0.094 U	0.090 U	0.091 U	0.078 U	0.072 U	NA	NA	NA
	Naphthalene	20	500	20	1,000	4	0.47 U	0.45 U	0.46 U	0.39 U	0.36 U	NA	NA	NA
	Toluene	500	500	1,000	1,000	30	0.094 U	0.090 U	0.091 U	0.078 U	0.072 U	NA	NA	NA
	m+p Xylene	100	500	100	1,000	100	0.19 U	0.18 U	0.18 U	0.16 U	0.14 U	NA	NA	NA
	o-Xylene	100	500	100	1,000	100	0.094 U	0.090 U	0.091 U	0.078 U	0.072 U	NA	NA	NA
EPH														
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	1,000	25 U	24 U	66 U	58 U	140 U	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	3,000	25 U	24 U	66 U	58 U	140 U	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	1,000	**65**	24 U	**160**	**150**	**180**	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	4	**0.81**	0.24 U	**2.3**	**2.1**	1.4 U	NA	NA	NA
	Acenaphthylene	600	10	600	10	1	0.25 U	0.24 U	0.66 U	0.58 U	1.4 U	NA	NA	NA
	Anthracene	1,000	1,000	3,000	3,000	1,000	**0.71**	0.24 U	**2.2**	**1.8**	1.4 U	NA	NA	NA
	Benzo(a)anthracene	7	7	40	40	7	**3.1**	**0.42**	**7.6**	**6.0**	**4.9**	NA	NA	NA
	Benzo(a)pyrene	2	2	7	7	2	**2.7**	**0.40**	**5.9**	**4.8**	**3.9**	NA	NA	NA
	Benzo(b)fluoranthene	7	7	40	40	7	**3.8**	**0.62**	**8.5**	**6.7**	**5.7**	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	1,000	**1.8**	**0.29**	**3.4**	**3.0**	**2.6**	NA	NA	NA
	Benzo(k)fluoranthene	70	70	400	400	70	**1.6**	**0.27**	**3.6**	**2.8**	**2.4**	NA	NA	NA
	Chrysene	70	70	400	400	70	**3.3**	**0.40**	**8.0**	**6.1**	**5.2**	NA	NA	NA
	Dibenz(a,h)anthracene	0.7	0.7	4	4	0.7	**0.58**	0.24 U	**1.2**	**0.94**	1.4 U	NA	NA	NA
	Fluoranthene	1,000	1,000	3,000	3,000	1,000	**7.1**	**1.1**	**17**	**13**	**11**	NA	NA	NA
	Fluorene	1,000	1,000	3,000	3,000	1,000	**0.31**	0.24 U	**1.1**	**0.78**	1.4 U	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	7	40	40	7	**1.8**	0.24 U	**3.6**	**3.0**	**2.5**	NA	NA	NA
	2-Methylnaphthalene	80	300	80	500	0.7	0.25 U	0.24 U	0.66 U	0.58 U	1.4 U	NA	NA	NA
	Naphthalene	20	500	20	1,000	4	0.25 U	0.24 U	0.66 U	0.58 U	1.4 U	NA	NA	NA
	Phenanthrene	500	500	1,000	1,000	10	**4.1**	**0.41**	**12**	**8.9**	**6.8**	NA	NA	NA
	Pyrene	1,000	1,000	3,000	3,000	1,000	**6.4**	**0.98**	**15**	**12**	**9.8**	NA	NA	NA

Table 1
Summary of Soil Analytical Results for Site Investigations Not Included in Phase II CSA Report
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:					SB NM 40	SB NM 41	SB NM 42	SB NM 43		P-021-EW1	P-029_EW1	P-029-EW2
		Sample Depth (ft.):					0-1.5	0-1.5	0-1.5	0-1	0-1	0-3	0-3	0-3
		Sample Date:					6/1/2012	6/1/2012	6/1/2012	6/1/2012	6/1/2012 Field Dup	12/15/2010	11/23/2010	12/15/2010
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3	RC S-1**								
SVOCs														
(mg/kg)	Phenol	50	20	50	20	1	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	Aniline	NS	NS	NS	NS	1,000	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	bis(2-Chloroethyl)ether	0.7	2.0	0.7	8	0.7	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	2-Chlorophenol	100	100	100	300	0.7	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	1,3-Dichlorobenzene	100	100	200	500	3	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	1,4-Dichlorobenzene	1	80	1	400	0.7	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	1,2-Dichlorobenzene	100	300	100	300	9	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	500	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	Hexachloroethane	3	50	3	200	0.7	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	Nitrobenzene	NS	NS	NS	NS	500	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	Isophorone	NS	NS	NS	NS	100	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	2-Nitrophenol	NS	NS	NS	NS	100	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	0.7	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	bis(2-Chloroethoxy)methane	NS	NS	NS	NS	500	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	2,4-Dichlorophenol	60	40	60	40	0.7	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	1,2,4-Trichlorobenzene	6	700	6	3,000	2	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	4-Chloroaniline	7	3	40	3	1	1.6 U	0.81 U	1.7 U	1.5 U	1.5 U	NA	NA	NA
	Hexachlorobutadiene	30	30	100	100	30	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	2,4,6-Trichlorophenol	20	20	20	20	0.7	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	2,4,5-Trichlorophenol	1,000	600	1,000	600	4	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	2-Chloronaphthalene	NS	NS	NS	NS	1,000	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	Dimethyl phthalate	50	600	50	600	1	1.6 U	0.81 U	1.7 U	1.5 U	1.5 U	NA	NA	NA
	2,6-Dinitrotoluene	NS	NS	NS	NS	100	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	2,4-Dinitrophenol	50	50	50	100	3	1.6 U	0.81 U	1.7 U	1.5 U	1.5 U	NA	NA	NA
	4-Nitrophenol	NS	NS	NS	NS	100	1.6 U	0.81 U	1.7 U	1.5 U	1.5 U	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	0.7	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	Diethyl phthalate	200	300	200	300	10	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	4-Bromophenyl phenyl ether	0.3*	0.3*	NS	NS	100	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	Hexachlorobenzene	0.7	0.7	1	1	0.7	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	Pentachlorophenol	3	3	20	10	3	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	50	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	100	1.6 U	0.81 U	1.7 U	1.5 U	1.5 U	NA	NA	NA
	3,3'-Dichlorobenzidine	3	3	20	20	3	0.41 U	0.21 U	0.44 U	0.40 U	0.38 U	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	90	90	600	600	90	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	**3.2**	NA
	Di-n-octyl phthalate	NS	NS	NS	NS	1,000	1.6 U	0.81 U	1.7 U	1.5 U	1.5 U	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	100	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	**7.7**	NA
	Acenaphthene	1,000	1,000	3,000	3,000	4	**1.0**	0.21 U	**0.81**	**0.60**	**1.2**	**10**	**11**	**29**
	Acenaphthylene	600	10	600	10	1	0.41 U	0.21 U	0.44 U	0.40 U	0.38 U	**0.65**	1.40 U	2.7 U
	Anthracene	1,000	1,000	3,000	3,000	1,000	**1.6**	0.21 U	**1.6**	**1.1**	**1.9**	**19**	**23**	**71**
	Benzo(a)anthracene	7	7	40	40	7	**6.1**	**0.52**	**5.5**	**3.9**	**5.0**	**36**	**103**	**220**
	Benzo(a)pyrene	2	2	7	7	2	**5.5**	**0.50**	**4.9**	**3.6**	**4.4**	**39**	**92**	**210**
	Benzo(b)fluoranthene	7	7	40	40	7	**7.1**	**0.63**	**7.8**	**4.9**	**6.2**	**32**	**88.6**	**190**
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	1,000	**2.3**	**0.23**	**1.7**	**1.3**	**1.5**	**28**	**26**	**150**
	Benzo(k)fluoranthene	70	70	400	400	70	**2.7**	**0.24**	**2.8**	**1.9**	**2.5**	**40**	**45**	**55**
	Chrysene	70	70	400	400	70	**6.3**	**0.56**	**5.8**	**4.3**	**5.1**	**36**	**109**	**220**
	Dibenz(a,h)anthracene	0.7	0.7	4	4	0.7	**0.64**	0.21 U	**0.51**	0.40 U	**0.46**	**7.1**	1.40 U	**15**
	Fluoranthene	1,000	1,000	3,000	3,000	1,000	**13**	**1.0**	**15**	**8.0**	**10**	**84**	**257**	**510**
	Fluorene	1,000	1,000	3,000	3,000	1,000	**0.70**	0.21 U	**0.70**	**0.52**	**0.96**	**8.8**	**11**	**21**
	Indeno(1,2,3-cd)pyrene	7	7	40	40	7	**3.2**	**0.32**	**2.3**	**1.7**	**2.2**	**27**	**29**	**140**
	2-Methylnaphthalene	80	300	80	500	0.7	0.41 U	0.21 U	0.44 U	0.40 U	0.38 U	NA	**2.4**	NA
	Naphthalene	20	500	20	1,000	4	0.41 U	0.21 U	0.44 U	0.40 U	**0.46**	**4.7**	**4.4**	**5.8**
	Phenanthrene	500	500	1,000	1,000	10	**9.3**	**0.62**	**8.7**	**6.5**	**8.9**	**63**	**174**	**320**
	Pyrene	1,000	1,000	3,000	3,000	1,000	**9.0**	**0.83**	**6.4**	**5.3**	**6.7**	**65**	**200**	**380**
	Acetophenone	NS	NS	NS	NS	1,000	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA

Table 1
Summary of Soil Analytical Results for Site Investigations Not Included in Phase II CSA Report
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:					SB NM 40	SB NM 41	SB NM 42	SB NM 43		P-021-EW1	P-029_EW1	P-029-EW2
		Sample Depth (ft.):					0-1.5	0-1.5	0-1.5	0-1	0-1	0-3	0-3	0-3
		Sample Date:					6/1/2012	6/1/2012	6/1/2012	6/1/2012	6/1/2012 Field Dup	12/15/2010	11/23/2010	12/15/2010
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3	RC S-1**								
	Bis(2-chloroisopropyl)ether	0.7	30	0.7	100	0.7	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	1,2-Diphenylhydrazine (as Azobenzene)	NS	NS	NS	NS	50	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	3/4-Methylphenol	NS	NS	NS	NS	500	0.83 U	0.42 U	0.89 U	0.80 U	0.76 U	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	**1.70**	NA
	3-Methylcholanthrene	NS	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	**1.60**	NA
	Carbazole	NS	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	**19**	NA
PCBs														
(mg/kg)	Aroclor 1016	1	1	4	4	1	0.12 U	0.12 U	0.13 U	0.12 U	0.11 U	NA	NA	NA
	Aroclor 1221	1	1	4	4	1	0.12 U	0.12 U	0.13 U	0.12 U	0.11 U	NA	NA	NA
	Aroclor 1232	1	1	4	4	1	0.12 U	0.12 U	0.13 U	0.12 U	0.11 U	NA	NA	NA
	Aroclor 1242	1	1	4	4	1	0.12 U	0.12 U	0.13 U	0.12 U	0.11 U	NA	NA	NA
	Aroclor 1248	1	1	4	4	1	0.12 U	0.12 U	0.13 U	0.12 U	0.11 U	NA	NA	NA
	Aroclor 1254	1	1	4	4	1	**0.19**	**0.18**	**0.17**	**0.21**	**0.19**	1.0 U	0.50 U	1.0 U
	Aroclor 1260	1	1	4	4	1	0.12 U	**0.14**	0.13 U	0.12 U	0.11 U	0.50 U	0.20 U	0.50 U
	Aroclor 1262	1	1	4	4	1	0.12 U	0.12 U	0.13 U	0.12 U	0.11 U	NA	NA	NA
	Aroclor 1268	1	1	4	4	1	0.12 U	0.12 U	0.13 U	0.12 U	0.11 U	NA	NA	NA
	Total PCBs	1	1	4	4	1	**0.19**	**0.32**	**0.17**	**0.21**	**0.19**	5.0 U	10 U	20 U
Metals, total														
(mg/kg)	Arsenic	20	20	20	20	20	2.9 U	2.9 U	3.2 U	2.9 U	2.8 U	14 U	15 U	15 U
	Barium	1,000	1,000	3,000	3,000	1,000	**110**	**86**	**70**	**60**	**56**	**334**	**398**	**255**
	Cadmium	70	70	100	100	70	**0.50**	**0.56**	**0.56**	**0.33**	**0.30**	8.0 U	8.0 U	8.0 U
	Chromium	100	100	200	200	100	**13**	**14**	**15**	**16**	**15**	**25**	**17**	28 U
	Lead	200	200	600	600	200	**290**	**370**	**250**	**150**	**140**	**271**	**312**	**336**
	Mercury	20	20	30	30	20	**0.38**	**0.13**	**0.19**	**0.20**	**0.21**	NA	NA	NA
	Selenium	400	400	700	700	400	5.8 U	5.8 U	6.3 U	5.8 U	5.6 U	NA	NA	NA
	Silver	100	100	200	200	100	0.58 U	**0.61**	0.63 U	0.58 U	0.56 U	NA	NA	NA
Metals, TCLP														
(mg/L)	Arsenic	NS	NS	NS	NS	5[3]	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	NA	NA	NA
	Barium	NS	NS	NS	NS	100[3]	**0.45**	**0.29**	**0.39**	**0.21**	**0.42**	NA	NA	NA
	Cadmium	NS	NS	NS	NS	1[3]	0.0040 U	0.0040 U	**0.0041**	0.0040 U	0.0040 U	NA	NA	NA
	Chromium	NS	NS	NS	NS	5[3]	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	NA	NA	NA
	Lead	NS	NS	NS	NS	5[3]	**0.074**	**0.13**	**0.29**	**0.043**	**0.043**	NA	NA	NA
	Mercury	NS	NS	NS	NS	0.2[3]	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	NA	NA	NA
	Selenium	NS	NS	NS	NS	1[3]	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	NA	NA	NA
	Silver	NS	NS	NS	NS	5[3]	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	NA	NA	NA

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
mg/L - milligrams per liter.
mV - milliVolt.
s.u. - Standard unit.
ND - Not detected; quantitation limit not available in historical data.
NS - No MassDEP standards exist for this analyte.
U - Compound was not detected at specified quantitation limit.
Values in **Bold** indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
TCLP - Toxicity Characteristic Leaching Procedure.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
(2) - MCP Method 1 standards and RC for 1,3-Dichloropropene used.
(3) - SW-846 Chapter 7, Table 7-1, *Maximum Concentration of Contaminants for Toxicity Characteristic* .
* - TRC developed standards.
**- For reference purpose only.
^ - EPA SW-846 Chapter 7, Table 7-1, Maximum Concentration of Contaminants for Toxicity Characteristic.

Table 2
Remedial Alternative Evaluation Matrix
Nemasket Street Lots
New Bedford, Massachusetts

	Comparative Evaluation Criteria*:	Comparative Effectiveness	Comparative Reliability	Comparative Difficulty of Implementation	Comparative Cost	Comparative Risks	Comparative Benefits	Comparative Timeliness	Non-Pecuniary Effects	Notes
Remedial Action Alternative	**No. 1 No Action**	Poor	Poor	N/A	N/A	N/A	N/A	N/A	N/A	This alternative may not meet the remedial action objectives and cleanup goals in the future due to reliability concerns. It does not support beneficial use of the properties and is included only for baseline comparative purposes.
	No. 2 Maintenance of Existing Site Controls and Implementation of Institutional Controls	Poor	Poor-Fair	Good	Good	Fair	Poor	Good (2-4 weeks)		This alternative is not as effective as the remaining options, since a Permanent Solution is not achieved. However, it is the least costly alternative, could be implemented immediately with relative ease, and results in the least energy consumption and associated impacts. It does not support beneficial use of the properties.
	No.3 Installation of Clean Utility Corridors, Construction of Exposure Barriers (Containment/Capping), and Institutional Controls	Poor-Fair	Fair-Good	Fair-Good	Fair-Good	Fair-Good	Good	Fair-Good (2-3 months)	Good	This alternative provides for a Permanent Solution under the MCP; however, TSCA compliance is marginal because there is no removal of elevated PCBs. It supports the desired future use of the Site as an athletic complex, and is slightly less in cost and risks than Alternative 4. An AUL would be implemented.
	No. 4 Targeted Excavation/Disposal of Soil with PCB Concentrations Greater than 100 mg/kg, Construction of Exposure Barriers (Containment/Capping), and Institutional Controls	Good	Fair-Good	Fair	Fair-Good	Fair-Good	Good	Fair-Good (2-3 months)	Good	This alternative provides for an MCP Permanent Solution and TSCA compliance and a reduction in soils with elevated PCB content for a cost only slightly more than for Alternative 3. Most soil remains on site under the caps which limits energy use for off-site soil transportation and disposal. Future risk is controlled consistent with Alternatives Nos. 3 and 5 since remaining impacted soil would be capped and an AUL implemented to restrict potential exposures under each scenario. **This is the preferred alternative.**
	No. 5 Targeted Excavation/Disposal of Soil with PCBs greater than 10 mg/kg, Construction of Exposure Barriers (Containment/ Capping), and Institutional Controls	Good	Good	Poor-Fair	Poor	Fair	Good	Fair (3-4 months)	Good	This alternative would provide a Permanent Solution and TSCA compliance, but at signficantly higher cost and consumption of energy. It would be the most difficult and time-consuming to implement because of the large volume of contaminated soil which would be excavated from the Site and transported off-site. An AUL would be implemented.

Notes:

1) * **Effectiveness** - the ability of the remedy to achieve a Permanent Solution under the MCP; to reuse, recycle, destroy, detoxify, or treat impacts at the site; to approach or achieve background; and ability to achieve TSCA compliance.
Reliability - the degree of certainty that the remedy will be successful over the short- and long-term timeframes, and the effectiveness of any measures required to manage remaining wastes or control emissions or dishcarges to the environment.
Difficulty of Implementation - comparative difficulty in terms of technical complexity; integration with facility operations and other remedial actions; monitoring, operations, maintenance or site access requirements or limitations requirements; material and labor availability; availability, capacity and location of necessary off-site treatment, storage, and disposal facilities; and whether regulatory requirements are met for likely approvals, permits or licenses required.
Relative Costs - Costs in terms of remedy design, implementation, disposal, operation, maintenance, and monitoring; environmental restoration; and total consumption of energy resources and externalities associated with the use of those resources (e.g., greenhouse gases and air pollutants).
Risks - comparative on-site and off-site risks posed to workers, the community, and the environment during and after remedy implementation.
Benefits - the comparative benefits of the alternatives including the provision for productive site reuse, restoration of natural resources, the avoided costs of relocating people or businesses, and the avoided lost value of the site.
Timeliness - the relative time for the alternative to eliminate uncontrolled sources of hazardous material and achieve a condition of No Significant Risk.
Non-Pecuniary Effects - the relative effect upon non-pecuniary interests, such as aesthetic values.

2) **Abbreviations:** AUL - Activity and Use Limitation, MCP - Massachusetts Contingency Plan (310 CMR 40.0000), PCB - polychlorinated biphenyl, TSCA - Toxic Substances Control, Act (40 CFR 761), mg/kg - milligrams per kilogram, N/A - Not Applicable.

Table 3
Cost Summary for the Remedial Alternatives
Nemasket Street Lots
New Bedford, Massachusetts

Remedial Alternative	Approximate Implementation Cost	Approximate Annual Monitoring Cost
ALTERNATIVE No. 2 - Maintenance of Existing Site Controls and Implementation of Institutional Controls	$39,000	$3,000
ALTERNATIVE No. 3 - Installation of Clean Utility Corridors, Construction of Exposure Barriers (Containment/Capping), and Institutional Controls	$4,300,000	$6,000
ALTERNATIVE No. 4 - Targeted Excavation/Disposal of Soil with PCB Concentrations Greater than 100 mg/kg, Construction of Exposure Barriers (Containment/Capping), and Institutional Controls	$4,400,000	$6,000
ALTERNATIVE No. 5 - Targeted Excavation/Disposal of Soil with PCB Concentrations Greater than 10 mg/kg, Construction of Exposure Barriers (Containment/Capping), and Institutional Controls	$5,800,000	$6,000

Notes:

1) Costs provided represent comparative numbers for the scenarios described in the Phase III, and were derived for the purposes of a comparative evaluation in accordance with the criteria listed at 310 CMR 40.0858(4). These estimated costs cannot be used as design-level assessments.

2) Each alternative assumes regulatory closure is conducted under the Massachusetts Contingency Plan; Alternatives 3 through 5 also include measures for Site Closure under the Toxic Substances Control Act (TSCA).

3) Federal reporting costs to reach a Permanent Solution are not included.

4) Alternative Nos. 3 through 5 assume 25% of Site soil excavated for disposal will require stabilization for metals.

5) Excavation dewatering is not anticipated nor included in the cost estimates.

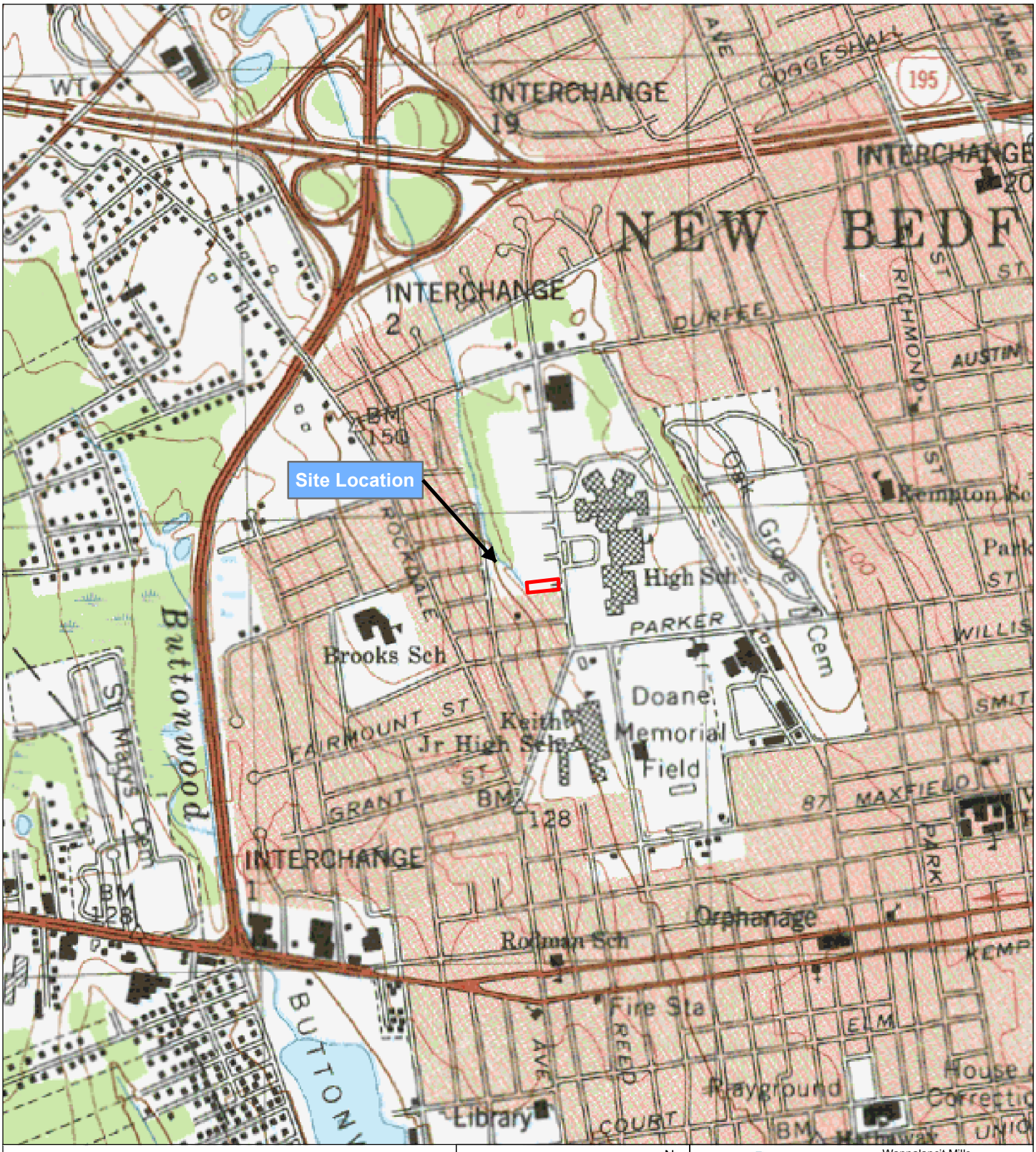
6) Costs do not include taxes and labor premiums.

7) Post-excavation sample results For Alternative No. 5 may alter the total volume of soil required to be removed to meet risk thresholds and/or TSCA occupancy requirements.

8) The impact of additional sampling (pre- or post- excavation) on soil volumes and/or remedial efficacy cannot be forecast.

9) Implementation costs include foreseeable expenses associated with the development of the proposed athletic facility, while annual costs reflect environmental monitoring for MCP compliance. See Cost Estimates in Appendix B for details.

FIGURES



Approximate Site Boundary

0 500 1,000 Feet

N

MASSACHUSETTS

Base map: USGS 7.5 MinuteTopographic Quadrangle: New Bedford

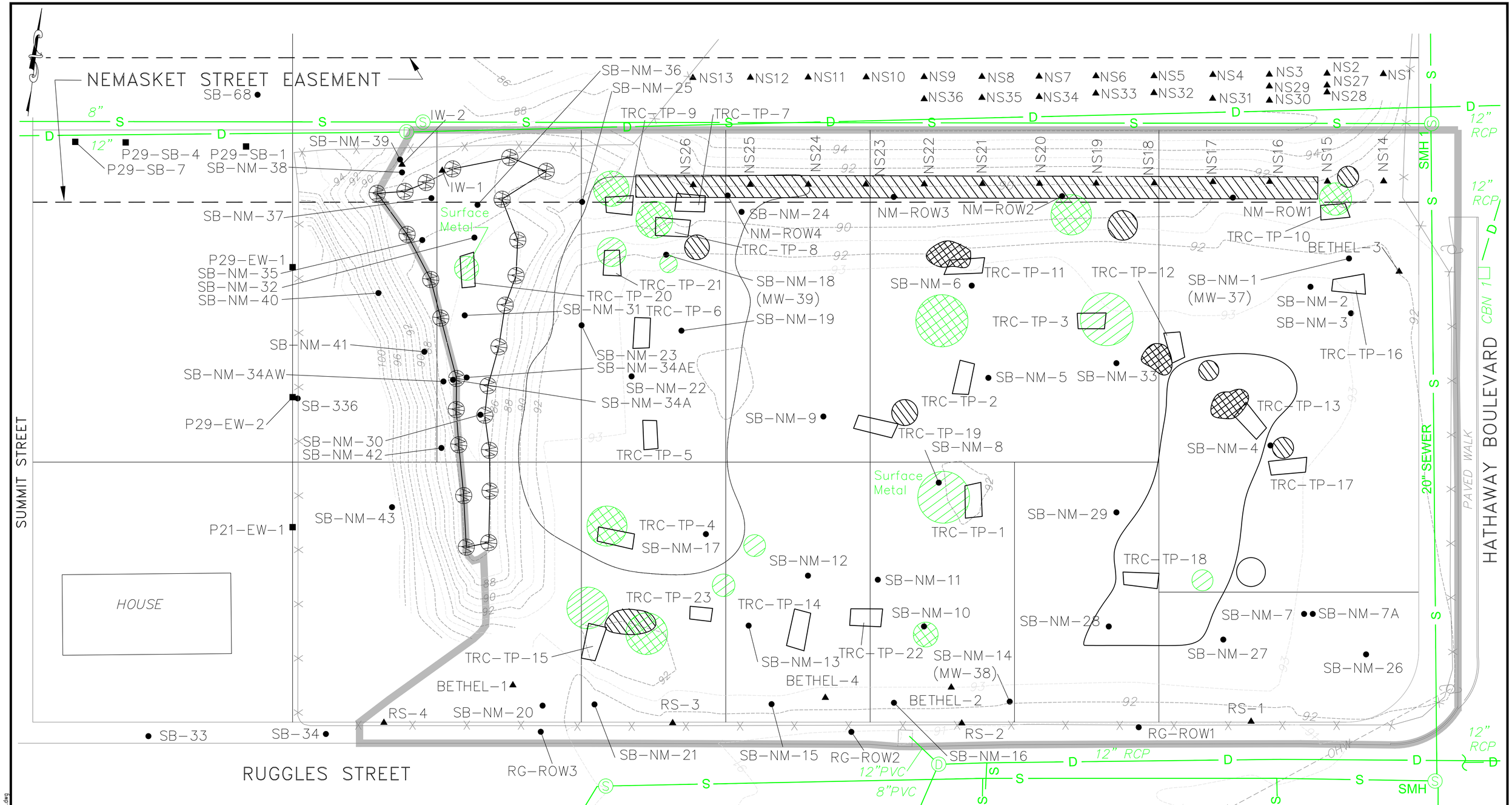
TRC
Wannalancit Mills
650 Suffolk Street
Lowell, MA 01854
978-970-5600

SITE LOCATION MAP

NEMASKET STREET LOTS
NEW BEDFORD, MA

FIGURE 1	OCT 2014

R:\Projects\GIS_2010\115058_Nemasket_Lots\2014\mxd\Fig1_Site_Location_Nemasket.mxd



NOTES:

1. EM AND GPR RESULTS BASED ON "COMBINED EM AND GPR RESULTS, NEMASKET STREET LOT, NEW BEDFORD, MA" BY HAGER GEOSCIENCE, INC. WOBURN, MA DATED NOVEMBER 2010.
2. BETA INFORMATION DERIVED FROM "PERIPHERAL AREAS SOUTH OF McCOY FIELD" UNDATED AND "BETHEL A.M.E. SOIL SAMPLE LOCATION PLAN" DATED 9-9-2005, BOTH FROM BETA GROUP. INC. OF NORWOOD MA.

LEGEND:

- TEST PIT LOCATION
- TRC SOIL BORING LOCATION
- PREVIOUS BETA SOIL BORING LOCATION
- EPA SOIL BORING LOCATION
- GPR ANOMALY
- GPR ANOMALY MARKED IN FIELD
- EM METAL ANOMALY
- EM METAL ANOMALY MARKED IN FIELD
- EM SOIL CONDUCTIVITY ANOMALY
- SEWER LINES
- WETLAND FLAGS
- LOT LINES
- NEMASKET STREET EASEMENT
- SITE BOUNDARY
- CHAIN LINK FENCE

APPROXIMATE GRAPHIC SCALE
0' 5' 10' 15' 30'

NEMASKET STREET LOTS
NEW BEDFORD, MASSACHUSETTS

NEMASKET STREET LOTS SAMPLE LOCATIONS

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

DRAWN BY: HWB
CHECKED BY: MAO
DATE: NOV 2015

FIGURE 2

FILE: T:\E_CAD\115058\NEMASKET ST LOT BORINGS 10-24-14.dwg

NEMASKET STREET EASEMENT

SUMMIT STREET

HATHAWAY BOULEVARD

PAVED WALK

RUGGLES STREET

20" SEWER

CBN 1

SMH 1

SMH

OHW

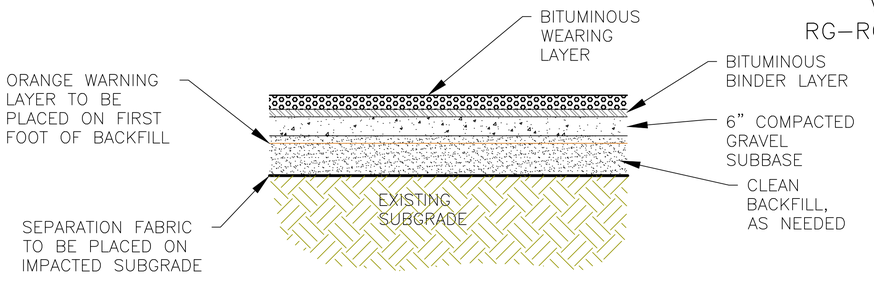
12" RCP

12"PVC

8"PVC

HOUSE

SB-68 SB-NM-39 SB-NM-38 IW-2 IW-1 SB-NM-25 SB-NM-37 SB-NM-36 TRC-TP-9 TRC-TP-8 TRC-TP-7 NM-ROW4 SB-NM-24 NM-ROW3 NM-ROW2 NM-ROW1 TRC-TP-10 BETHEL-3 SB-NM-1 (MW-37) SB-NM-2 SB-NM-3 TRC-TP-16 P29-EW-1 SB-NM-35 SB-NM-32 SB-NM-40 TRC-TP-21 TRC-TP-20 SB-NM-18 (MW-39) TRC-TP-6 SB-NM-19 SB-NM-31 SB-NM-41 SB-NM-23 SB-NM-22 SB-NM-34AW SB-NM-34AE SB-NM-34A P29-EW-2 SB-NM-30 SB-NM-9 TRC-TP-5 SB-NM-42 SB-NM-43 P21-EW-1 SB-NM-17 TRC-TP-4 SB-NM-12 SB-NM-11 TRC-TP-14 TRC-TP-22 SB-NM-10 TRC-TP-23 TRC-TP-15 SB-NM-13 BETHEL-1 SB-NM-21 SB-NM-15 BETHEL-4 SB-NM-20 RS-3 SB-NM-16 BETHEL-2 SB-33 SB-34 RS-4 RS-2 RG-ROW1 RS-1 RG-ROW2 RG-ROW3 SB-NM-6 TRC-TP-11 TRC-TP-3 SB-NM-5 SB-NM-33 TRC-TP-2 TRC-TP-19 SB-NM-8 TRC-TP-1 SB-NM-29 TRC-TP-18 SB-NM-28 SB-NM-14 (MW-38) TRC-TP-12 TRC-TP-13 SB-NM-4 TRC-TP-17 SB-NM-7 SB-NM-7A SB-NM-27 SB-NM-26 NS1 NS2 NS3 NS4 NS5 NS6 NS7 NS8 NS9 NS10 NS11 NS12 NS13 NS14 NS15 NS16 NS17 NS18 NS19 NS20 NS21 NS22 NS23 NS24 NS25 NS26 NS27 NS28 NS29 NS30 NS31 NS32 NS33 NS34 NS35 NS36



D-1 TYPICAL ASPHALT CAP - CONCEPTUAL

TRC NOT TO SCALE DATE: 9/2012

NOTE: CLEAN BACKFILL ADDED TO RAISE FINAL PAVEMENT SURFACE TO MATCH EXISTING PAVEMENT SURFACE AT KEITH MIDDLE SCHOOL

LEGEND:

- TEST PIT LOCATION
- TRC SOIL BORING LOCATION
- PREVIOUS BETA SOIL BORING LOCATION
- EPA SOIL BORING LOCATION
- LOT LINES
- NEMASKET STREET EASEMENT
- SITE BOUNDARY/LIMIT OF PROPOSED CAPPED AREA
- SEWER LINES
- WETLAND FLAGS
- CHAIN LINK FENCE

NOTES:

1. BETA INFORMATION DERIVED FROM "PERIPHERAL AREAS SOUTH OF McCOY FIELD" UNDATED AND "BETHEL A.M.E. SOIL SAMPLE LOCATION PLAN" DATED 9-9-2005, BOTH FROM BETA GROUP. INC. OF NORWOOD MA.

APPROXIMATE GRAPHIC SCALE

0' 5' 10' 15' 30'

NEMASKET STREET LOTS
NEW BEDFORD, MASSACHUSETTS

REMEDIAL ALTERNATIVE 3
CONCEPTUAL SITE LAYOUT

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

DRAWN BY: VCD | DATE: NOV 2015

CHECKED BY: MAO

FIGURE 3

NEMASKET STREET EASEMENT

SUMMIT STREET

HATHAWAY BOULEVARD

RUGGLES STREET

PAVED WALK

HOUSE

SB-68 SB-NM-39 SB-NM-38 IW-2 IW-1 SB-NM-37 SB-NM-36 SB-NM-25 TRC-TP-9 TRC-TP-8 TRC-TP-7 SB-NM-24 NM-ROW4 NM-ROW3 NM-ROW2 NM-ROW1 TRC-TP-10 BETHEL-3 SB-NM-1 (MW-37) SB-NM-2 SB-NM-3 TRC-TP-16 TRC-TP-12 TRC-TP-13 SB-NM-4 TRC-TP-17 TRC-TP-18 SB-NM-7 SB-NM-7A SB-NM-27 SB-NM-26 SB-NM-14 (MW-38) SB-NM-28 SB-NM-29 TRC-TP-1 SB-NM-8 TRC-TP-19 TRC-TP-2 SB-NM-5 SB-NM-33 TRC-TP-3 SB-NM-6 TRC-TP-11 SB-NM-18 (MW-39) SB-NM-19 TRC-TP-6 TRC-TP-20 TRC-TP-21 P29-EW-1 SB-NM-35 SB-NM-32 SB-NM-40 SB-NM-41 SB-NM-31 SB-NM-23 SB-NM-22 SB-NM-9 SB-NM-34AW SB-NM-34AE SB-NM-34A SB-NM-30 P29-EW-2 TRC-TP-5 SB-NM-42 SB-NM-43 P21-EW-1 SB-NM-17 TRC-TP-4 SB-NM-12 SB-NM-11 TRC-TP-14 TRC-TP-22 SB-NM-10 TRC-TP-23 TRC-TP-15 SB-NM-13 BETHEL-1 SB-NM-21 SB-NM-20 RS-3 SB-NM-15 SB-NM-16 BETHEL-4 BETHEL-2 RS-4 RS-2 RS-1 RG-ROW1 RG-ROW2 RG-ROW3 SB-33 SB-34 NS1 NS2 NS3 NS4 NS5 NS6 NS7 NS8 NS9 NS10 NS11 NS12 NS13 NS14 NS15 NS16 NS17 NS18 NS19 NS20 NS21 NS22 NS23 NS24 NS25 NS26 NS27 NS28 NS29 NS30 NS31 NS32 NS33 NS34 NS35 NS36

8" S D 12"

12" RCP

SMH 1

20" SEWER

CBN 1

12"PVC 8"PVC OHW SMH

LEGEND:

- TEST PIT LOCATION
- TRC SOIL BORING LOCATION
- PREVIOUS BETA SOIL BORING LOCATION
- EPA SOIL BORING LOCATION
- LOT LINES
- NEMASKET STREET EASEMENT
- SITE BOUNDARY
- WETLAND FLAGS
- PROPOSED TSCA EXCAVATION AREA (PCB SOIL CONCENTRATIONS >100 PPM)
- S SEWER LINE
- CHAIN LINK FENCE
- D SURFACE DRAIN LINE

NOTES:

1. BETA INFORMATION DERIVED FROM "PERIPHERAL AREAS SOUTH OF McCOY FIELD" UNDATED AND "BETHEL A.M.E. SOIL SAMPLE LOCATION PLAN" DATED 9-9-2005, BOTH FROM BETA GROUP. INC. OF NORWOOD MA.

APPROXIMATE GRAPHIC SCALE

0' 5' 10' 15' 30'

NEMASKET STREET LOTS
NEW BEDFORD, MASSACHUSETTS

REMEDIAL ALTERNATIVE 4
CONCEPTUAL EXCAVATION LOCATIONS

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

DRAWN BY: VCD
CHECKED BY: MAO
DATE: NOV 2015

FIGURE 4

FILE: J:\Projects\115058 - New Bedford\Phase IV - Nemasket\Phase III Work\Ph III Public Comment Draft Nov 2014\CAD\Nemasket - Phase III- 10-23-14.dwg

NEMASKET STREET EASEMENT

SUMMIT STREET

HATHAWAY BOULEVARD

RUGGLES STREET

PAVED WALK

HOUSE

SB-68
SB-NM-39
SB-NM-38
IW-2
IW-1
SB-NM-37
SB-NM-36
SB-NM-25
TRC-TP-9
TRC-TP-8
TRC-TP-21
TRC-TP-20
TRC-TP-6
SB-NM-31
SB-NM-23
SB-NM-22
SB-NM-34AE
SB-NM-34A
SB-NM-30
SB-NM-42
SB-NM-43
P29-EW-1
SB-NM-35
SB-NM-32
SB-NM-40
SB-NM-41
SB-NM-34AW
P29-EW-2
P21-EW-1
TRC-TP-5
TRC-TP-4
SB-NM-17
TRC-TP-23
TRC-TP-15
BETHEL-1
SB-NM-21
SB-NM-20
RS-3
RS-4
SB-33
SB-34
RG-ROW3
NS13 NS12 NS11 NS10 NS9 NS36 NS8 NS35 NS7 NS34 NS6 NS33 NS5 NS32 NS4 NS31 NS3 NS29 NS30 NS2 NS27 NS28 NS1
NS26 NS25 NS24 NS23 NS22 NS21 NS20 NS19 NS18 NS17 NS16 NS15 NS14
NM-ROW4
SB-NM-24
TRC-TP-7
SB-NM-18
(MW-39)
SB-NM-19
NM-ROW3
NM-ROW2
NM-ROW1
TRC-TP-10
BETHEL-3
SB-NM-1
(MW-37)
SB-NM-2
SB-NM-3
TRC-TP-16
SB-NM-6
TRC-TP-11
TRC-TP-3
TRC-TP-12
SB-NM-5
SB-NM-33
TRC-TP-2
SB-NM-9
TRC-TP-19
SB-NM-8
TRC-TP-1
SB-NM-29
TRC-TP-13
SB-NM-4
TRC-TP-17
TRC-TP-18
SB-NM-12
SB-NM-11
TRC-TP-14
TRC-TP-22
SB-NM-10
SB-NM-13
BETHEL-4
SB-NM-15
SB-NM-16
BETHEL-2
SB-NM-28
SB-NM-14
(MW-38)
RG-ROW1
RS-1
RS-2
RG-ROW2
SB-NM-7
SB-NM-7A
SB-NM-27
SB-NM-26
SMH 1
SMH
20" SEWER
CBN 1
OHW
12" RCP
12"PVC
8"PVC

LEGEND:

- TEST PIT LOCATION
- TRC SOIL BORING LOCATION
- PREVIOUS BETA SOIL BORING LOCATION
- EPA SOIL BORING LOCATION
- LOT LINES
- NEMASKET STREET EASEMENT
- SITE BOUNDARY
- WETLAND FLAGS
- PROPOSED TSCA SPOT EXCAVATION AREA (PCB SOIL CONCENTRATIONS >10 PPM)
- PROPOSED TSCA EXCAVATION AREA (PCB SOIL CONCENTRATIONS >10 PPM)
- SEWER LINES
- CHAIN LINK FENCE

LIMITS OF EXCAVATIONS ARE SUBJECT TO VERIFICATION SAMPLING (SEE NOTE 2)

NOTES:

1. BETA INFORMATION DERIVED FROM "PERIPHERAL AREAS SOUTH OF McCOY FIELD" UNDATED AND "BETHEL A.M.E. SOIL SAMPLE LOCATION PLAN" DATED 9-9-2005, BOTH FROM BETA GROUP. INC. OF NORWOOD MA.
2. THE EXTENT OF EXCAVATIONS WILL BE DETERMINED THROUGH ADDITIONAL SOIL SAMPLING AND ANALYSIS.

APPROXIMATE GRAPHIC SCALE
0' 5' 10' 15' 30'

NEMASKET STREET LOTS
NEW BEDFORD, MASSACHUSETTS

REMEDIAL ALTERNATIVE 5
CONCEPTUAL EXCAVATION LOCATIONS

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

FIGURE 5

DRAWN BY: VCD
CHECKED BY: MAO
DATE: OCT 2015

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APPENDIX A

PROJECT OVERVIEW PLANS

CONCEPTUAL DRAWING

–NOT FOR BIDDING OR CONSTRUCTION PURPOSES–

LEGEND

- EXISTING PROPERTY BOUNDARY
- 95 EXISTING CONTOUR (1')
- EXISTING WETLAND BOUNDARY
- S EXISTING SEWER LINE
- D EXISTING DRAIN LINE
- W W W EXISTING WATER LINE
- OHW EXISTING OVERHEAD WIRE
- WALL EXISTING WALL
- X X X X EXISTING FENCE LINE
- CBN CATCH BASIN
- CLF CHAIN LINK FENCE
- SMH SEWER MANHOLE
- DMH DRAIN MANHOLE
- VGC VERTICAL GRANITE CURB
- RCP REINFORCED CONCRETE PIPE
- PVC POLYVINYL CHLORIDE PIPE

NEMASKET STREET LOTS

5 CONTIGUOUS PROPERTIES

102 GREENWOOD ST.

KEITH MIDDLE SCHOOL

GREENWOOD STREET

RUGGLES STREET

HATHAWAY BOULEVARD

VEGETATED WETLAND 1

100' WETLAND BUFFER

MW3
RIM=93.59
TOP PVC=93.47
GRND=93.8

HSE.

SHEDS

SHED

POOL

HOUSE

CHURCH

PAVED DRIVE

PAVED WALK

SIDEWALK

CONCRETE WALK

CROSSWALK

PAVEMENT

VGC

STONE WALL

BOLLARDS

PARKING LOT

GRASS

METER PIT

PLUGGED END

TRAFFIC LT.

EMH

EHH

DBL CBN

8" SEWER

18" RCP

20" SEWER

24" RCP

30" RCP

30" DRAIN PIPE

12" RCP

N 07°34'04" W 1670.3'

ASSUMED CITY BENCH MARK
EL.=100 ASSUMED
EL.=89.95 SITE BASE

NOTE: THE "5 CONTIGUOUS PROPERTIES" AND "102 GREENWOOD STREET" ARE COLLECTIVELY KNOWN AS THE "ACQUIRED RESIDENTIAL PROPERTIES".

SCALE: 1"=30'

0' 15' 30' 60' 90'

DRAFT

REV.	DATE	DESCRIPTION	C/O	DRN	CHK

NEMASKET STREET LOTS
ACQUIRED RESIDENTIAL PROPERTIES
NEW BEDFORD, MASSACHUSETTS

EXISTING CONDITIONS

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

DRAWN BY: DMP
DATE: NOV. 201
CHECKED BY: DJT

FIGURE 1

FILE: J:\Projects\115058 – New Bedford\Nemasket Street Lots (former Bethel AME)\New Developments\Nemasket Soccer Concepts\Option 1 Nemasket–Keith.dwg

CONCEPTUAL DRAWING

–NOT FOR BIDDING OR CONSTRUCTION PURPOSES–

LEGEND

- EXISTING PROPERTY BOUNDARY
- EXISTING CONTOUR (1')
- EXISTING WETLAND BOUNDARY
- EXISTING SEWER LINE
- EXISTING DRAIN LINE
- EXISTING WATER LINE
- EXISTING OVERHEAD WIRE
- EXISTING WALL
- EXISTING FENCE LINE
- CBN CATCH BASIN
- CLF CHAIN LINK FENCE
- SMH SEWER MANHOLE
- DMH DRAIN MANHOLE
- VGC VERTICAL GRANITE CURB
- RCP REINFORCED CONCRETE PIPE
- PVC POLYVINYL CHLORIDE PIPE
- PROPOSED PERIMETER FENCE LINE
- PROPOSED FENCE ACCESS GATE
- PROPOSED LIGHTING FOR SOCCER FIELD ILLUMINATION
- SYNTHETIC TURF SURFACE
- NATURAL TURF SURFACE (GRASS)
- NEW ASPHALT PAVEMENT SURFACE
- NEW CONCRETE PAVEMENT SURFACE
- PROPOSED TREES

GREENWOOD STREET

RUGGLES STREET

HATHAWAY BOULEVARD

–BASKETBALL COURT–

–SOCCER FIELD–
(MEETS NATIONAL FEDERATION OF HIGH SCHOOL STANDARDS)

–SMALL DOG AREA–
(PEA STONE SURFACE)

–LARGE DOG AREA–
(PEA STONE SURFACE)

PROPOSED RETAINING WALL

GATHERING AND WARM–UP AREA

PROVIDE PEDESTRIAN AND EMERGENCY VEHICLE ACCESS GATES

SPECTATOR SEATING (TYP)

PAVED PARKING AREA

WATER STATION (TYP)

ACCESS CORRAL

CLIMBING STONES (TYP)

SHADE TREE

SAND PLAY AREA

SCREENING PLANTS (TYP)

PORTION OF GREENWOOD STREET TO BE DISCONTINUED

102 GREENWOOD ST.

5 CONTIGUOUS PROPERTIES

NEMASKET STREET LOTS

RESTROOMS

CONCRETE WALKWAY

ACCESS GATE

EDGE OF EXISTING PARKING LOT. PAVEMENT AND CURB TO BE REMOVED.

PORTION OF EXISTING SUBSURFACE STORMWATER CHAMBERS TO BE REMOVED AND RELOCATED BENEATH EXISTING PARKING AREA TO REMAIN. ADD NEW CONNECTION TO HATHAWAY BOULEVARD STORM DRAIN SYSTEM.

EXISTING SUBSURFACE STORMWATER CHAMBERS

PROPOSED EDGE OF PARKING LOT WITH CURB

PROVIDE EMERGENCY VEHICLE ACCESS GATE

KEITH MIDDLE SCHOOL

TEAM AND COACHING AREA | OFFICIAL AREA | TEAM AND COACHING AREA

300.0'

160.0'

100' WETLAND BUFFER

VEGETATED WETLAND 1

MW3
RIM=93.59
TOP PVC=93.47
GRND=93.8

N 07°34'04" W 1670.3'

ASSUMED CITY BENCH MARK
EL.=100 ASSUMED
EL.=89.95 SITE BASE

SCALE: 1"=30'
0' 15' 30' 60' 90'

DRAFT

REV.	DATE	DESCRIPTION	C/O	DRN	CHK

NEMASKET STREET LOTS
ACQUIRED RES. PROPERTIES
NEW BEDFORD, MASSACHUSETTS

PROJECT OVERVIEW

TRC
Wannalancit Mills
650 Suffolk Street
Lowell, MA 01854
(978) 970–5600

DRAWN BY: DMP
CHECKED BY: DJT
DATE: NOV 201

FIGURE 2

FILE: J:\Projects\115058 – New Bedford\Nemasket Street Lots (Former Bethel AME)\New Development\Nemasket Soccer Concepts\Option 1 Nemasket–Keith.dwg

APPENDIX B

COST ESTIMATE

Cost Summary for the Remedial Alternatives
Nemasket Street Lots
New Bedford, Massachusetts

Remedial Alternative	Approximate Implementation Cost	Approximate Annual Monitoring Cost
ALTERNATIVE No. 2 - Maintenance of Existing Site Controls and Implementation of Institutional Controls	$39,000	$3,000
ALTERNATIVE No. 3 - Installation of Clean Utility Corridors, Construction of Exposure Barriers (Containment/Capping), and Institutional Controls	$4,300,000	$6,000
ALTERNATIVE No. 4 - Targeted Excavation/Disposal of Soil with PCB Concentrations Greater than 100 mg/kg, Construction of Exposure Barriers (Containment/Capping), and Institutional Controls	$4,400,000	$6,000
ALTERNATIVE No. 5 - Targeted Excavation/Disposal of Soil with PCB Concentrations Greater than 10 mg/kg, Construction of Exposure Barriers (Containment/Capping), and Institutional Controls	$5,800,000	$6,000

Notes:

1) Costs provided represent comparative numbers for the scenarios described in the Phase III, and were derived for the purposes of a comparative evaluation in accordance with the criteria listed at 310 CMR 40.0858(4). These estimated costs cannot be used as design-level assessments.

2) Each alternative assumes regulatory closure is conducted under the Massachusetts Contingency Plan; Alternatives 3 through 5 also include measures for Site Closure under the Toxic Substances Control Act (TSCA).

3) Federal reporting costs to reach a Permanent Solution are not included.

4) Alternative Nos. 3 through 5 assume 25% of Site soil excavated for disposal will require stabilization for metals.

5) Excavation dewatering is not anticipated nor included in the cost estimates.

6) Costs do not include taxes and labor premiums.

7) Post-excavation sample results For Alternative No. 5 may alter the total volume of soil required to be removed to meet risk thresholds and/or TSCA occupancy requirements.

8) The impact of additional sampling (pre- or post- excavation) on soil volumes and/or remedial efficacy cannot be forecast.

9) Implementation costs include foreseeable expenses associated with the development of the proposed athletic facility, while annual costs reflect environmental monitoring for MCP compliance. See Cost Estimates in Appendix B for details.

REMEDIAL DESIGN COST ESTIMATE **NEMASKET STREET LOTS, NEW BEDFORD, MA**

Alternative No. 2 - Maintenance of Existing Site Controls and Implementation of Institutional Controls

Assumptions/basis:

1 Based on achieving a Temporary Solution with Conditions with annual inspections/reports.

Description	Quantity	Unit	Unit Cost	Item Cost	Total Cost
CAPITAL COSTS					
1.0 Confirmation of Exisiting Site Control Integrity					$1,000
1.1 Confirmatory Site Visit and Review	1	day	$1,000	$1,000	
2.0 Regulatory Compliance					$30,000
2.1 Temporay Solution - Partial	1	ls	$10,000.00	$10,000	
2.2 Activity and Use Limitation	1	ls	$10,000.00	$10,000	
2.3 Five-Year Review	1	ls	$10,000.00	$10,000	
3.0 Project Oversight					$3,100
3.1 Project Management			10%	$31,000	
				Subtotal Capital Costs:	**$34,100**
OPERATION, MAINTENANCE, AND MONITORING (OMM) COSTS					
4.0 Annual Costs					$2,500
4.1 Annual Site Inspection & Report	1	ls	$2,500	$2,500	
				Subtotal Annual OMM Costs:	**$2,500**
5.0 Contingency					$5,500
15% of Scope			15%	$36,600	
				Contingency:	**$5,500**

COST BREAKDOWN SUMMARY with contingency

	Base	Contingency	Subtotal (rounded)
Capital	$34,100	$5,115	$39,000
1st Year Annual OMM	$2,500	$375	$3,000
ESTIMATED TOTAL COST (1st year):			**$42,000**

REMEDIAL DESIGN COST ESTIMATE **NEMASKET STREET LOTS, NEW BEDFORD, MA**

Alternative No. 3 - Installation of Clean Utility Corridors, Construction of Exposure Barriers (Containment/Capping), and Institutional Controls

Assumptions/basis:

1. The costs presented herein are presented at a screening level on a good-faith basis, are commensurate with the concept-level drawings for an athletic complex, and should not be used as final design-level estimates. Owner should seek actual contractor quotes prior to construction.
2. Unit costs are based in part on the September 2015 Construction Cost Index.
3. Pricing does not include labor premiums or taxes.
4. Excavation dewatering is not anticipated.
5. Costs for excavation are increased by 10% to reflect on-site hauling and stockpile management.
6. Costs for spectator seating are not included.
7. Other than those specifically identified, subsurface utilities will not be encountered. This estimate does not include additional work to incorporate clean corridors for utilities other than for those included as part of this work.
8. The earthwork presented in this estimate represents environmental remediation and subgrade preparation for the construction of the basketball court, soccer field, and turf areas. Specified backfill materials, drainage utilities, artificial turf materials, surface features, and other components considered part of the turf system are included in the lump sum line item below, provided by Green Acres. Does not include water spray system for turf cooling.
9. Existing light poles and foundations at KMS parking lot will be removed. Concrete foundations will be broken up and buried beneath the cap.
10. Relocation of the existing stormwater chambers beneath KMS will be required. Existing components will be able to be reused. A new outlet manhole and clean-corridor connection to the storm drain beneath Hathaway Blvd. will be required.
11. Conditions beneath the KMS parking lot are as shown on the plan "As-Blt Phase 2 Utility's/Clean Corridor" by WES Construction Corp., dated 5/26/05.
12. Soil removed to relocate stormwater chambers may contain >50 mg/kg total PCBs, and most soil removed from Nemasket Street Lots will contain <50 mg/kg.
13. Existing KMS pavement is three inches thick; new pavement will match existing.
14. Granite curbing removed from KMS parking lot can be reused on-site.
15. Beneath areas of artificial turf, nine inches of clean material will be placed on top of the existing fill material after it is graded and compacted. It is assumed that this material will be graded during construction of the turf system.
16. Fabric materials placed within the capping systems will include an orange warning layer, installed 1 foot above contaminated material, and a black separation fabric, installed directly above contaminated material.
17. Planted trees within a soil exposure barrier will be permitted by MassDEP and EPA.
18. Backfill imported to the site will be tested for VOCs, SVOCs, EPH/VPH, PCBs, MCP Metals, Pesticides, and Herbicides, as well as geotechnical criteria.
19. Waste disposal characterization sampling includes analyses for VOCs, SVOCs, PCBs, RCRA 8 Metals, TCLP lead, ignitability, reactivity, and conductivity.
20. A Notice of Intent filing will be required for work within the buffer zone of the wetland on the KMS property. No filings will be necessary for the disturbances to the isolated wetland on the Nemasket Street Lots.

	Description	Quantity	Unit	Unit Cost	Item Cost	Total Cost
CAPITAL COSTS						
1.0	Site Preparation					$196,100
1.1	Mob/demob (10% of site work, not including T&D and turf system)		10%	$1,214,631	$121,463	
1.2	Install perimeter temporary construction fence	1,675	lf	$7.72	$12,935	
1.3	Install erosion control - hay bales, silt fence	1,675	lf	$15.97	$26,746	
1.4	Existing fence removal and disposal	1,390	lf	$8.19	$11,385	
1.5	Clearing and grub brush, dispose off-site	2	ac	$7,425.48	$14,541	
1.6	Prepare soil handling/temporary storage areas	1	ea	$2,500.00	$2,500	
1.7	Survey layout for excavation areas and grades	1	ls	$2,500.00	$2,500	
1.8	Construct construction entrance pads	2	ea	$2,010.00	$4,020	
2.0	Site Demolition & Stormwater System Relocation - Keith Middle School					$387,400
2.1	Sawcut existing parking lot	585	lf	$3.14	$1,835	
2.2	Remove existing curbing and set aside	400	lf	$7.66	$3,065	
2.3	Demolish existing asphalt pavement	2,732	sy	$6.42	$17,529	
2.4	Dispose of or recycle asphalt pavement off-site	615	ton	$76	$46,716	
2.5	Remove clean cap material beneath pavement to access stormwater chambers	861	cy	$10.00	$8,609	
2.6	Remove existing stormwater system components and set aside	1	ls	$5,085	$5,085	
2.7	Remove existing light poles & foundations	2	ea	$3,051	$6,101	
2.8	Remove KMS fence foundations	405	lf	$7.66	$3,104	
2.9	Excavate clean cap soils for new stormwater chambers location	332	cy	$10.00	$3,323	
2.10	Excavate capped impacted soils for new chamber location	1,442	cy	$10.00	$14,413	
2.11	On-site soil stabilization for metals concentrations (assume 25% of total)	175	ton	$40	$6,986	
2.12	Transportation & disposal of impacted soils (assume PCBs >50 mg/kg)	699	ton	$300	$209,583	
2.13	Reinstall stormwater system components	1	ls	$10,000	$10,000	
2.14	Install drainage system outlet to Hathaway Boulevard	1	ls	$5,000	$5,000	
2.15	Purchase additional clean backfill material (stone)	542	ton	$17.54	$9,502	
2.16	Backfill & compact new chamber location & outlet trench with clean soil	3,772	ton	$5.94	$22,408	
2.17	Pavement restoration	4,000	sf	$2.92	$11,691	
2.18	Reset granite curbing	200	lf	$12.20	$2,440	
3.0	Environmental Cleanup and Subgrade Preparation - Nemasket Street Lots					$682,000
3.1	Remove topsoil, stockpile on site for disposal	1,863	cy	$6.77	$12,614	
3.2	On-site soil stabilization for metals concentrations (assume 25% of total)	699	ton	$40	$27,940	
3.3	Transport and disposal of topsoils (assume contains PCBs <50 mg/kg)	2,794	ton	$110	$307,343	
3.4	Excavate perimeter soils, place directly into low areas on site	1,305	cy	$10.00	$13,046	
3.5	Rough grade and compact subsoils	14,259	sy	$1.98	$28,236	
3.6	Install separation fabric on fill material surface	128,335	sf	$0.33	$41,762	
3.7	Install 2.5' clean borrow in green areas	2,467	ton	$21.50	$53,053	
3.8	Install 0.5' clean topsoil in green areas	329	cy	$45.00	$14,804	
3.9	Install clean borrow to meet subgrade and final elevations beneath turf area	6,271	ton	$21.50	$134,845	
3.10	Install orange warning layer fabric	128,335	sf	$0.38	$48,287	
4.0	Construction & Site Restoration (Nemasket Street Lots)					$1,554,900
4.1	Install subsurface stormwater chambers	1	ls	$42,000	$42,000	
4.2	Install retaining wall leveling base	645	sf	$5.14	$3,318	
4.3	Install retaining wall	1,075	sf	$22.16	$23,819	
4.4	Basketball court paving	8,900	sf	$5.94	$52,869	
4.5	Basketball court features & linework	1	ls	$6,000	$6,000	
4.6	Concrete walkway installation	2,905	sf	$5.14	$14,944	
4.8	Restroom facility with utilities	1	ls	$72,000	$72,000	
4.9	Artifical turf system and soccer field installation	95,910	sf	$11	$1,055,010	
4.10	Trees	38	ea	$100	$3,800	
4.11	Hydroseeding on clean soil surface areas around perimeter	2,246	sy	$2.46	$5,524	
4.12	Soccer field illumination	1	ls	$219,000	$219,000	
4.13	Perimeter fencing	1,560	lf	$36.24	$56,529	
5.0	Quality Assurance / Laboratory Analysis					$34,800
5.1	Sample analysis for topsoil disposal	11	ea	$620	$6,929	
5.2	Sample analysis for targeted PCB soil disposal	0	ea	$620	$0	
5.3	Backfill characterization analysis	2	ea	$1,016	$2,032	
5.4	Backfill geotechnical analysis	2	ea	$315	$630	
5.5	Field compaction testing	25	day	$1,013	$25,111	
6.0	Regulatory Compliance					$77,000
6.1	Notice of Intent filing	1	ls	$10,000	$10,000	
6.2	Stormwater report	1	ls	$10,000	$10,000	
6.3	NPDES compliance	1	ls	$8,000	$8,000	
6.4	Coordination and reporting at state & federal level for disturbances to KMS cap	1	ls	$10,000	$10,000	
6.5	Data evaluation, bills of lading, waste disposal management	1	ls	$7,000	$7,000	
6.7	RAM Plan and RAM Completion report	1	ls	$12,000	$12,000	
6.8	Permanent Solution and AUL	1	ls	$20,000	$20,000	
7.0	Project Design and Oversight					$497,400
7.1	Project design		10%	$1,214,631	$121,463	
7.2	Environmental field oversight (includes sample collection and air monitoring)	30	day	$1,093	$32,790	
7.3	Construction field oversight	30	day	$910	$27,300	
7.4	Construction management (% not applied to T&D)		6%	$1,214,631	$72,878	
7.5	Project management (% not applied to T&D)		10%	$1,214,631	$121,463	
7.6	Contractor overhead & profit (where not already applied)		10%	$1,214,631	$121,463	
					Subtotal Capital Costs:	**$3,429,600**
OPERATION, MAINTENANCE, AND MONITORING COSTS (MCP)						
8.0	Annual Costs					$5,000
8.1	Semi-annual cap inspection & report	2	ls	$2,500	$5,000	
					Subtotal Annual OMM Costs:	**$5,000**
9.0	Contingencies					$858,700
	25% of Scope			25%	$3,434,600	
					Contingency:	**$858,700**

COST BREAKDOWN SUMMARY

	Base	Contingency	Subtotal (rounded)
Capital	$3,429,600	$857,400	$4,290,000
1st Year Annual OMM	$5,000	$1,250	$6,000

ESTIMATED TOTAL COST (1st year): $4,296,000

REMEDIAL DESIGN COST ESTIMATE **NEMASKET STREET LOTS, NEW BEDFORD, MA**

Alternative No. 4 - Targeted Excavation/Disposal of Soil with PCB Concentrations Greater than 100 mg/kg, Construction of Exposure Barriers (Containment/Capping), and Institutional Controls

Assumptions/basis:

1 The costs presented herein are presented at a screening level on a good-faith basis, are commensurate with the concept-level drawings for an athletic complex, and should not be used as final design-level estimates. Owner should seek actual contractor quotes prior to construction.
2 Unit costs are based in part on the September 2015 Construction Cost Index.
3 Pricing does not include labor premiums or taxes.
4 Excavation dewatering is not anticipated.
5 Costs for excavation are increased by 10% to reflect on-site hauling and stockpile management.
6 Costs for spectator seating are not included.
7 Other than those specifically identified, subsurface utilities will not be encountered. This estimate does not include additional work to incorporate clean corridors for utilities other than for those included as part of this work.
8 The earthwork presented in this estimate represents environmental remediation and subgrade preparation for the construction of the basketball court, soccer field, and turf areas. Specified backfill materials, drainage utilities, artificial turf materials, surface features, and other components considered part of the turf system are included in the lump sum line item below, provided by Green Acres. Does not include water spray system for turf cooling.
9 Existing light poles and foundations at KMS parking lot will be removed. Concrete foundations will be broken up and buried beneath the cap.
10 Relocation of the existing stormwater chambers beneath KMS will be required. Existing components will be able to be reused. A new outlet manhole and clean-corridor connection to the storm drain beneath Hathaway Blvd. will be required.
11 Conditions beneath the KMS parking lot are as shown on the plan "As-Blt Phase 2 Utility's/Clean Corridor" by WES Construction Corp., dated 5/26/05.
12 Soil removed to relocate stormwater chambers may contain >50 mg/kg total PCBs, and most soil removed from Nemasket Street Lots will contain <50 mg/kg.
13 Existing pavement at KMS is three inches thick, new pavement will match existing.
14 Granite curbing removed from KMS parking lot can be reused on-site.
15 Beneath areas of artificial turf, nine inches of clean material will be placed on top of the existing fill material after it is graded and compacted. It is assumed that this material will be graded during construction of the turf system.
16 Fabric materials placed within the capping systems will include an orange warning layer, installed 1 foot above contaminated material, and a black separation fabric, installed directly above contaminated material.
17 Planted trees within a soil exposure barrier will be permitted by MassDEP and EPA.
18 Backfill imported to the site will be tested for VOCs, SVOCs, EPH/VPH, PCBs, MCP metals, pesticides, herbicides, and dioxins, as well as geotechnical criteria.
19 Waste disposal characterization sampling includes analyses for VOCs, SVOCs, PCBs, RCRA 8 Metals, TCLP lead, ignitability, reactivity, and conductivity.
20 A Notice of Intent filing will be required for work within the buffer zone of the wetland on the KMS property. No filings will be necessary for the disturbances to the isolated wetland on the Nemasket Street Lots.

	Description	Quantity	Unit	Unit Cost	Item Cost	Total Cost
CAPITAL COSTS						
1.0	Site Preparation					$197,800
1.1	Mob/demob (10% of site work, not including T&D and turf system)		10%	$1,230,621	$123,062	
1.2	Install perimeter temporary construction fence	1,675	lf	$7.72	$12,935	
1.3	Install erosion control - hay bales, silt fence	1,675	lf	$15.97	$26,746	
1.4	Existing fence removal and disposal	1,390	lf	$8.19	$11,385	
1.5	Clearing and grub brush, dispose off-site	2	ac	$7,425	$14,541	
1.6	Prepare soil handling/temporary storage areas	1	ea	$2,550	$2,550	
1.7	Survey layout for excavation areas and grades	1	ls	$2,500	$2,500	
1.8	Construct construction entrance pads	2	ea	$2,010	$4,020	
2.0	Site Demolition & Stormwater System Relocation - Keith Middle School					$387,400
2.1	Sawcut existing parking lot	585	lf	$3.14	$1,835	
2.2	Remove existing curbing and set aside	400	lf	$7.66	$3,065	
2.3	Demolish existing asphalt pavement	2,732	sy	$6.42	$17,529	
2.4	Dispose of or recycle asphalt pavement off-site	615	ton	$76	$46,716	
2.5	Remove clean cap material beneath pavement to access stormwater chambers	861	cy	$10.00	$8,609	
2.6	Remove existing stormwater system components and set aside	1	ls	$5,085	$5,085	
2.7	Remove existing light poles & foundations	2	ea	$3,051	$6,101	
2.8	Remove KMS fence foundations	405	lf	$7.66	$3,104	
2.9	Excavate clean cap soils for new stormwater chambers location	332	cy	$10.00	$3,323	
2.10	Excavate capped impacted soils for new chamber location	1,442	cy	$10.00	$14,413	
2.11	On-site soil stabilization for metals concentrations (assume 25% of total)	175	ton	$40	$6,986	
2.12	Transportation & disposal of impacted soils (assume PCBs >50 mg/kg)	699	ton	$300	$209,583	
2.13	Reinstall stormwater system components	1	ls	$10,000	$10,000	
2.14	Install drainage system outlet to Hathaway Boulevard	1	ls	$5,000	$5,000	
2.15	Purchase additional clean backfill material (stone)	542	ton	$17.54	$9,502	
2.16	Backfill & compact new chamber location & outlet trench with clean soil	3,772	ton	$5.94	$22,408	
2.17	Pavement restoration	4,000	sf	$2.92	$11,691	
2.18	Reset granite curbing	200	lf	$12.20	$2,440	
3.0	Environmental Cleanup and Subgrade Preparation - Nemasket Street Lots					$739,100
3.1	Perform targeted soil removal for soils containing PCBs >100 mg/kg, store in roll-off	136	cy	$13.63	$1,855.63	
3.2	Remove topsoil, stockpile on-site for disposal	1,854	cy	$6.77	$12,558	
3.3	On-site soil stabilization for metals concentrations (assume 25% of total)	746	ton	$40	$29,857	
3.4	Transport and disposal of targeted PCB soils (contains PCBs >50 mg/kg)	157	ton	$300	$47,083	
3.5	Transport and disposal of targeted PCB soils (contains PCBs <50 mg/kg)	47	ton	$110	$5,194	
3.6	Transport and disposal of topsoils (assume contains PCBs <50 mg/kg)	2,782	ton	$110	$305,968	
3.7	Excavate perimeter soils, place directly into low areas on-site	1,305	cy	$10.00	$13,046	
3.8	Rough grade and compact subsoils	14,259	sy	$1.98	$28,236	
3.9	Install separation fabric on fill material surface	128,335	sf	$0.33	$41,762	
3.10	Install 2.5' clean borrow in green areas	2,467	ton	$21.50	$53,053	
3.11	Install 0.5' clean topsoil in green areas	329	cy	$45.00	$14,804	
3.12	Install clean borrow to meet subgrade and final elevations beneath turf area	6,475	ton	$21.50	$139,235	
3.13	Install orange warning layer fabric	128,335	sf	$0.38	$48,287	
4.0	Construction & Site Restoration (Nemasket Street Lots)					$1,554,900
4.1	Install subsurface stormwater chambers	1	ls	$42,000	$42,000	
4.2	Install retaining wall leveling base	645	sf	$5.14	$3,318	
4.3	Install retaining wall	1,075	sf	$22.16	$23,819	
4.4	Basketball court paving	8,900	sf	$5.94	$52,869	
4.5	Basketball court features & linework	1	ls	$6,000	$6,000	
4.6	Concrete walkway installation	2,905	sf	$5.14	$14,944	
4.7	Restroom facility with utilities	1	ls	$72,000	$72,000	
4.8	Artifical turf system and soccer field installation	95,910	sf	$11	$1,055,010	
4.9	Trees	38	ea	$100	$3,800	
4.10	Hydroseeding on clean soil surface areas around perimeter	2,246	sy	$2.46	$5,524	
4.11	Soccer field illumination	1	ls	$219,000	$219,000	
4.12	Perimeter fencing	1,560	lf	$36.24	$56,529	
5.0	Quality Assurance / Laboratory Analysis					$35,600
5.1	Sample analysis for topsoil disposal	11	ea	$620	$6,898	
5.2	Sample analysis for targeted PCB soil disposal	1	ea	$620	$620	
5.3	Backfill characterization analysis	2	ea	$1,016	$2,032	
5.4	Backfill geotechnical analysis	2	ea	$315	$630	
5.5	Field compaction testing	25	day	$1,013	$25,369	
6.0	Regulatory Compliance					$77,000
6.1	Notice of Intent filing	1	ls	$10,000	$10,000	
6.2	Stormwater report	1	ls	$10,000	$10,000	
6.3	NPDES compliance	1	ls	$8,000	$8,000	
6.4	Coordination and reporting at state & federal level for disturbances to KMS cap	1	ls	$10,000	$10,000	
6.5	Data evaluation, bills of lading, waste disposal management	1	ls	$7,000	$7,000	
6.6	RAM Plan and RAM Completion report	1	ls	$12,000	$12,000	
6.7	Permanent Solution and AUL	1	ls	$20,000	$20,000	
7.0	Project Design and Oversight					$503,100
7.1	Project design		10%	$1,230,621	$123,062	
7.2	Environmental field oversight (includes sample collection and air monitoring)	30	day	$1,093	$32,790	
7.3	Construction field oversight	30	day	$910	$27,300	
7.4	Construction management (% not applied to T&D)		6%	$1,230,621	$73,837	
7.5	Project management (% not applied to T&D)		10%	$1,230,621	$123,062	
7.6	Contractor overhead & profit (where not already applied)		10%	$1,230,621	$123,062	
					Subtotal Capital Costs:	**$3,494,900**
OPERATION, MAINTENANCE, AND MONITORING COSTS (MCP)						
8.0	Annual Costs					$4,400
8.1	Semi-annual cap inspection & report	2	ls	$2,200	$4,400	
					Subtotal Annual OMM Costs:	**$4,400**
9.0	Contingencies					$874,900
	25% of Scope			25%	$3,499,300	
					Contingency:	**$874,900**

COST BREAKDOWN SUMMARY

	Base	Contingency	Subtotal (rounded)
Capital	$3,494,900	$873,725	$4,370,000
1st Year Annual OMM	$4,400	$1,100	$6,000

ESTIMATED TOTAL COST (1st year): $4,376,000

Remedial Alternative #4
Soil Volume Calculations for Transportation and Disposal

Controlling Sample ID	Excavation Area (sq. ft.)	Depth (ft)	Volume (cy)	Weight (tons)	PCB Remediation Waste?	Concentration ≥ 50 mg/kg?	Unit Cost for Disposal*	Total Cost for Disposal
SB-NM-2	50	0 - 3	5.6	8.3	No	No	$110	$917
		3 - 11	14.8	22	**Yes**	**Yes**	$300	$6,667
SB-NM-3	50	0 - 3	5.6	8	No	No	$110	$917
		3 - 13	18.5	28	**Yes**	**Yes**	$300	$8,333
SB-NM-16	50	0 - 1	1.9	3	No	No	$110	$306
		1 - 3	3.7	6	**Yes**	**Yes**	$300	$1,667
SB-NM-19	50	0 - 3	5.6	8	No	No	$110	$917
		3 - 11	14.8	22	**Yes**	**Yes**	$300	$6,667
SB-NM-24	50	0 - 3	5.6	8	No	No	$110	$917
		3 - 8	9.3	14	**Yes**	**Yes**	$300	$4,167
SB-NM-25	50	0 - 1	1.9	3	No	No	$110	$306
		1 - 7	11.1	17	**Yes**	**Yes**	$300	$5,000
BETHEL-1	50	0 - 3	5.6	8	No	No	$110	$917
		3 - 8.5	10.2	15	**Yes**	**Yes**	$300	$4,583
BETHEL-4	50	0 - 4	7.4	11	**Yes**	**Yes**	$300	$3,333
NS25	50	0 - 8	14.8	22	**Yes**	**Yes**	$300	$6,667
Totals	450		136	204				

Estimated Grand Total = $52,278

* Soil containing 1<x<50 mg/kg PCBs to be disposed at a **RCRA Subtitle D** facility at $110/ton (assumed).
Soil containing >50 mg/kg PCBs to be disposed at a **RCRA Subtitle C** facility at $300/ton based on recent $270/ton at ARP.
Targeting soil containing > 100 ppm PCBs for excavation and off-site disposal.

REMEDIAL DESIGN COST ESTIMATE **NEMASKET STREET LOTS, NEW BEDFORD, MA**

Alternative No. 5 - Targeted Excavation/Disposal of Soil with PCB Concentrations Greater than 10 mg/kg, Construction of Exposure Barriers (Containment/Capping), and Institutional Controls

Assumptions/basis:

1. The costs presented herein are presented at a screening level on a good-faith basis, are commensurate with the concept-level drawings for an athletic complex, and should not be used as final design-level estimates. Owner should seek actual contractor quotes prior to construction.
2. Unit costs are based in part on the September 2015 Construction Cost Index.
3. Pricing does not include labor premiums or taxes.
4. Excavation dewatering is not anticipated.
5. Costs for excavation are increased by 10% to reflect on-site hauling and stockpile management.
6. Costs for spectator seating are not included.
7. Other than those specifically identified, subsurface utilities will not be encountered. This estimate does not include additional work to incorporate clean corridors for utilities other than for those included as part of this work.
8. The earthwork presented in this estimate represents environmental remediation and subgrade preparation for the construction of the basketball court, soccer field, and turf areas. Specified backfill materials, drainage utilities, artificial turf materials, surface features, and other components considered part of the turf system are included in the lump sum line item below, provided by Green Acres. Does not include water spray system for turf cooling.
9. Existing light poles and foundations at KMS parking lot will be removed. Concrete foundations will be broken up and buried beneath the cap.
10. Relocation of the existing stormwater chambers beneath KMS will be required. Existing components will be able to be reused. A new outlet manhole and clean-corridor connection to the storm drain beneath Hathaway Blvd. will be required.
11. Conditions beneath the KMS parking lot are as shown on the plan "As-Blt Phase 2 Utility's/Clean Corridor" by WES Construction Corp., dated 5/26/05.
12. Soil removed to relocate stormwater chambers may contain >50 mg/kg total PCBs, and most soil removed from Nemasket Street Lots will contain <50 mg/kg.
13. Existing pavement is three inches thick, new pavement will match existing.
14. Granite curbing removed from KMS parking lot can be reused on-site.
15. Beneath areas of artificial turf, nine inches of clean material will be placed on top of the existing fill material after it is graded and compacted. It is assumed that this material will be graded during construction of the turf system.
16. Fabric materials placed within the capping systems will include an orange warning layer, installed 1 foot above contaminated material, and a black separation fabric, installed directly above contaminated material.
17. Planted trees within a soil exposure barrier will be permitted by MassDEP and EPA.
18. Backfill imported to the site will be tested for VOCs, SVOCs, EPH/VPH, PCBs, MCP Metals, Pesticides, and Herbicides, as well as geotechnical criteria.
19. Waste disposal characterization sampling includes analyses for VOCs, SVOCs, PCBs, RCRA 8 Metals, TCLP lead, ignitability, reactivity, and conductivity.
20. A Notice of Intent filing will be required for work within the buffer zone of the wetland on the KMS property. No filings will be necessary for the disturbances to the isolated wetland on the Nemasket Street Lots.

	Description	Quantity	Unit	Unit Cost	Item Cost	Total Cost
CAPITAL COSTS						
1.0	Site Preparation					$224,000
1.1	Mob/demob (10% of site work, not including T&D and turf system)		10%	$1,492,998	$149,300	
1.2	Install perimeter temporary construction fence	1,675	lf	$7.72	$12,935	
1.3	Install erosion control - hay bales, silt fence	1,675	lf	$15.97	$26,746	
1.4	Existing fence removal and disposal	1,390	lf	$8.19	$11,385	
1.5	Clearing and grub brush, dispose off-site	2	ac	$7,425	$14,541	
1.6	Prepare soil handling/temporary storage areas	1	ea	$2,500	$2,500	
1.7	Survey layout for excavation areas and grades	1	ls	$2,500	$2,500	
1.8	Construct construction entrance pads	2	ea	$2,010.00	$4,020	
2.0	Site Demolition & Stormwater System Relocation - Keith Middle School					$387,300
2.1	Sawcut existing parking lot	585	lf	$3.14	$1,835	
2.2	Remove existing curbing and set aside	400	lf	$7.66	$3,065	
2.3	Demolish existing asphalt pavement	2,732	sy	$6.42	$17,529	
2.4	Dispose of or recycle asphalt pavement off-site	615	ton	$76	$46,716	
2.5	Remove clean cap material beneath pavement to access stormwater chambers	861	cy	$10.00	$8,609	
2.6	Remove existing stormwater system components and set aside	1	ls	$5,000	$5,000	
2.7	Remove existing light poles & foundations	2	ea	$3,000	$6,000	
2.8	Remove KMS fence foundations	405	lf	$7.66	$3,104	
2.9	Excavate clean cap soils for new stormwater chambers location	332	cy	$10.00	$3,323	
2.10	Excavate capped impacted soils for new chamber location	1,442	cy	$10.00	$14,413	
2.11	On-site soil stabilization for metals concentrations (assume 25% of total)	175	ton	$40	$6,986	
2.12	Transportation & disposal of impacted soils (assume PCBs >50 mg/kg)	699	ton	$300	$209,583	
2.13	Reinstall stormwater system components	1	ls	$10,000	$10,000	
2.14	Install drainage system outlet to Hathaway Boulevard	1	ls	$5,000	$5,000	
2.15	Purchase additional clean backfill material (stone)	542	ton	$17.54	$9,502	
2.16	Backfill & compact new chamber location & outlet trench with clean soil	3,772	ton	$5.94	$22,408	
2.17	Pavement restoration	4,000	sf	$2.92	$11,691	
2.18	Reset granite curbing	200	lf	$12.20	$2,440	
3.0	Environmental Cleanup and Subgrade Preparation - Nemasket Street Lots					$1,708,400
3.1	Perform targeted soil removal for soils containing PCBs >10 mg/kg, store in roll-offs	4,257	cy	$9.09	$38,691.32	
3.2	Perform expedited confirmatory soil sample analysis for PCBs	100	ea	$86.25	$8,625	
3.3	Remove topsoil, stockpile on site for disposal	1,613	cy	$6.77	$10,926	
3.4	On-site soil stabilization for metals concentrations (assume 25% of total)	2,134	ton	$40	$85,356	
3.5	Transport and disposal of targeted PCB soils (contains PCBs >50 mg/kg)	687	ton	$300	$206,167	
3.6	Transport and disposal of targeted PCB soils (contains PCBs <50 mg/kg)	5,698	ton	$110	$626,817	
3.7	Transport and disposal of topsoil (assume contains PCBs <50 mg/kg)	2,420	ton	$110	$266,200	
3.8	Excavate perimeter soils, place directly into low areas on site	1,305	cy	$10.00	$13,046	
3.9	Rough grade and compact subsoils	14,259	sy	$1.98	$28,236	
3.10	Install separation fabric on fill material surface	128,335	sf	$0.33	$41,762	
3.11	Install 2.5' clean borrow in green areas	2,467	ton	$21.50	$53,053	
3.12	Install 0.5' clean topsoil in green areas	329	cy	$45.00	$14,804	
3.13	Install clean borrow to meet subgrade and final elevations beneath turf area	12,387	ton	$21.50	$266,341	
3.14	Install orange warning layer fabric	128,335	sf	$0.38	$48,287	
4.0	Construction & Site Restoration (Nemasket Street Lots)					$1,554,900
4.1	Install subsurface stormwater chambers	1	ls	$42,000	$42,000	
4.2	Install retaining wall leveling base	645	sf	$5.14	$3,318	
4.3	Install retaining wall	1,075	sf	$22.16	$23,819	
4.4	Basketball court paving	8,900	sf	$5.94	$52,869	
4.5	Basketball court features & linework	1	ls	$6,000	$6,000	
4.6	Concrete walkway installation	2,905	sf	$5.14	$14,944	
4.7	Restroom facility with utilities	1	ls	$72,000	$72,000	
4.8	Artifical turf system and soccer field installation	95,910	sf	$11	$1,055,010	
4.9	Trees	38	ea	$100	$3,800	
4.10	Hydroseeding on clean soil surface areas around perimeter	2,246	sy	$2.46	$5,524	
4.11	Soccer field illumination	1	ls	$219,000	$219,000	
4.12	Perimeter fencing	1,560	lf	$36.24	$56,529	
5.0	Quality Assurance / Laboratory Analysis					$58,700
5.1	Sample analysis for topsoil disposal	10	ea	$620	$6,002	
5.2	Sample analysis for targeted PCB soil disposal	26	ea	$620	$15,836	
5.3	Backfill characterization analysis	3	ea	$1,016	$3,048	
5.4	Backfill geotechnical analysis	3	ea	$315	$945	
5.5	Field compaction testing	32	day	$1,013	$32,854	
6.0	Regulatory Compliance					$77,000
6.1	Notice of Intent filing	1	ls	$10,000	$10,000	
6.2	Stormwater report	1	ls	$10,000	$10,000	
6.3	NPDES compliance	1	ls	$8,000	$8,000	
6.4	Coordination and reporting at state & federal level for disturbances to KMS cap	1	ls	$10,000	$10,000	
6.5	Data evaluation, bills of lading, waste disposal management	1	ls	$7,000	$7,000	
6.7	RAM Plan and RAM Completion report	1	ls	$12,000	$12,000	
6.8	Permanent Solution and AUL	1	ls	$20,000	$20,000	
7.0	Project Design and Oversight					$617,600
7.1	Project design		10%	$1,492,998	$149,300	
7.2	Environmental field oversight (includes sample collection and air monitoring)	40	day	$1,093	$43,720	
7.3	Construction field oversight	40	day	$910	$36,400	
7.4	Construction management (% not applied to T&D)		6%	$1,492,998	$89,580	
7.5	Project management (% not applied to T&D)		10%	$1,492,998	$149,300	
7.6	Contractor overhead & profit (where not already applied)		10%	$1,492,998	$149,300	
					Subtotal Capital Costs:	**$4,627,900**
OPERATION, MAINTENANCE, AND MONITORING COSTS (MCP)						
8.0	Annual Costs					$4,400
8.1	Semi-annual cap inspection & report	2	ls	$2,200	$4,400	
					Subtotal Annual OMM Costs:	**$4,400**
9.0	Contingencies					$1,158,100
	25% of Scope			25%	$4,632,300	
					Contingency:	**$1,158,100**

COST BREAKDOWN SUMMARY

	Base	Contingency	Subtotal (rounded)
Capital	$4,627,900	$1,156,975	$5,780,000
1st Year Annual OMM	$4,400	$1,100	$6,000
ESTIMATED TOTAL COST (1st year):			**$5,786,000**

Remedial Alternative #5
Soil Volume Calculations for Transportation and Disposal

Excavation Area	Area/Spot ID	Excavation Area (sq. ft.)	Depth (ft)	Volume (cy)	Weight (tons)	PCB Remediation Waste?	Concentration ≥ 50 mg/kg?	Unit Cost for Disposal*	Total Cost for Disposal
Area 1	Main Area	1065	0 - 8	316	473	**Yes**	**Yes**	300	$142,000
	BETHEL 1	50	0 - 3	6	8	No	No	110	$917
			3 - 7	7	11	**Yes**	**Yes**	300	$3,333
			7 - 8	2	3	No	No	110	$306
Area 2	Main Area	3500	0 - 11	1,361	2,042	No	No	110	$224,583
	SB-NM-19	50	0 - 3	6	8	No	No	110	$917
			3 - 11	15	22	**Yes**	**Yes**	300	$6,667
	SB-NM-22	50	0 - 1	2	3	No	No	110	$306
			1 - 3	4	6	**Yes**	**Yes**	300	$1,667
			3 - 11	15	22	No	No	110	$2,444
	SB-NM-23	50	0 - 1	2	3	No	No	110	$306
			1 - 3	4	6	**Yes**	**Yes**	300	$1,667
			3 - 11	15	22	No	No	110	$2,444
	SB-NM-24	50	0 - 3	6	8	No	No	110	$917
			3 - 8	9	14	**Yes**	**Yes**	300	$4,167
			8 - 11	6	8	No	No	110	$917
	SB-NM-25	50	0 - 1	2	3	No	No	110	$306
			1 - 7	11	17	**Yes**	**Yes**	300	$5,000
			7 - 11	7	11	No	No	110	$1,222
	NM-ROW4	50	0 - 1	2	3	No	No	110	$306
			1 - 7	11	17	**Yes**	**Yes**	300	$5,000
			7 - 11	7	11	No	No	110	$1,222
	NS25	50	0 - 8	15	22	**Yes**	**Yes**	300	$6,667
			8 11	6	8	No	No	110	$917
Area 3	Main Area	4885	0 - 5	905	1,357	No	No	110	$149,264
	BETHEL-4	50	0 - 4	7	11	**Yes**	**Yes**	300	$3,333
			4 - 5	0	0	No	No	110	$0
	SB-NM-11	50	0 - 1	2	3	No	No	110	$306
			1 - 5	7	11	**Yes**	**Yes**	300	$3,333
	SB-NM-16	50	0 - 1	2	3	No	No	110	$306
			1 - 3	4	6	**Yes**	**Yes**	300	$1,667
			3 - 5	4	6	No	No	110	$611
	TRC-TP-14	50	0 - 1	2	3	No	No	110	$306
			1 - 3	4	6	**Yes**	**Yes**	300	$1,667
			3 - 5	4	6	No	No	110	$611
Area 4	Main Area	1080	0 - 9	360	540	No	No	110	$59,400
Area 5	Main Area	1975	0 - 13	951	1,426	No	No	110	$156,903
	BETHEL-3	50	0 - 1	2	3	No	No	110	$306
			1 - 3	4	6	**Yes**	**Yes**	300	$1,667
			3 - 13	19	28	No	No	110	$3,056
	SB-NM-2	50	0 - 5	9	14	No	No	110	$1,528
			5 - 11	11	17	**Yes**	**Yes**	300	$5,000
			11 - 13	4	6	No	No	110	$611
	SB-NM-3	50	0 - 3	6	8	No	No	110	$917
			3 - 13	19	28	**Yes**	**Yes**	300	$8,333
Spot	SB-NM-4	50	0 - 5	9	14	No	No	110	$1,528
Spot	SB-NM-5	50	0 - 1	2	3	No	No	110	$306
Spot	SB-NM-7	50	0 - 3	6	8	No	No	110	$917
Spot	SB-NM-8	50	0 - 5	9	14	No	No	110	$1,528
Spot	SB-NM-9	50	0 - 1	2	3	**Yes**	**Yes**	300	$833
Spot	SB-NM-14	50	0 - 3	6	8	No	No	110	$917
Spot	SB-NM-26	50	0 - 5	9	14	**Yes**	**Yes**	300	$4,167
Spot	SB-NM-27	50	0 - 7	13	19	No	No	110	$2,139
Spot	SB-NM-28	50	0 - 3	6	8	No	No	110	$917
Spot	SB-NM-29	50	0 - 8	15	22	No	No	110	$2,444
Spot	SB-NM-30	50	0 - 1	2	3	No	No	110	$306
Spot	SB-NM-33	50	0 - 1	2	3	No	No	110	$306
Spot	SB-NM-36	50	0 - 3	6	8	No	No	110	$917
Spot	NM-ROW1	50	0 - 3	6	8	No	No	110	$917
Spot	NM-ROW2	50	0 - 5	9	14	No	No	110	$1,528
Totals		14,005		4,257	6,386				
								Estimated Grand Total =	**$832,983**

* Soil containing 1<x<50 mg/kg PCBs to be disposed at a **RCRA Subtitle D** facility at $110/ton (assumed).
Soil containing >50 mg/kg PCBs to be disposed at a **RCRA Subtitle C** facility at $300/ton based on recent ARP at $270/ton.
Targeting soil containing > 10 ppm PCBs for disposal.

APPENDIX C

RISK EVALUATION FOR SELECTED REMEDY

TRC
Wannalancit Mills
650 Suffolk Street
Lowell, Massachusetts 01854

Main 978.970.5600
Fax 978.453.1995

Memorandum

To:	Dave Sullivan, LSP, TRC Environmental Corporation
From:	Diane Silverman, Ph.D., TRC Environmental Corporation
CC:	Matthew A. Oliveira, CHMM, TRC Environmental Corporation
Subject:	Summary of Method 3 Utility Worker Risk Calculations for the Nemasket Street Lots and Nemasket Street Utility Easement, New Bedford, Massachusetts
Date:	October 5, 2015

This memorandum summarizes Method 3 risk calculations for the utility worker scenario, prepared to evaluate anticipated post-remedial conditions at the Nemasket Street Lots and Nemasket Street utility easement in New Bedford, Massachusetts (the Site). The Method 3 risk calculations were prepared consistent with 310 CMR 40.0835(4) (g) and (h) of the Massachusetts Contingency Plan (MCP) and the Massachusetts Department of Environmental Protection (MassDEP) *Guidance for Disposal Site Risk Characterization* (MassDEP, 1995).

The risk calculations were performed to evaluate whether, following the completion of risk reduction activities involving removal of soil sampling locations with total polychlorinated biphenyl (PCB) concentrations in excess of 100 mg/kg, capping of on-property soils and construction of an athletic complex, as described in detail in the Phase III report, emergency utility worker exposures within the existing Nemasket Street utility easement would be associated with No Significant Risk. No other receptors have been included in this evaluation because the Nemasket Street Lots (including the utility easement) will be entirely covered with the athletic field surface or other exposure barriers, newly-installed utilities will be in clean utility corridors and an Activity and Use Limitation will be implemented to manage soils located below the athletic field or other exposure barriers, thereby preventing soil exposure to all receptors except for the utility worker in the existing Nemasket Street easement. The existing Nemasket Street utility easement contains a water line located 8 feet below ground surface and storm and sanitary sewer lines located approximately 7 and 10 feet below ground surface, respectively.

For completeness, utility worker exposure to shallow groundwater within the clean utility corridors throughout the Nemasket Street Lots is also evaluated since soil, but not shallow groundwater contact, will be prevented by the remedy.

The Nemasket Street utility easement, located partially on the Nemasket Street Lots and partially on the adjacent Keith Middle School (KMS) property, has been evaluated as one exposure point for utility worker exposures. Utility workers within the easement are assumed to be exposed to soil within the easement via incidental ingestion, dermal contact and fugitive dust inhalation, to shallow

groundwater via dermal contact and to trench air via inhalation of volatile compounds released from soil and groundwater. The utility worker within the clean utility corridors across the Nemasket Street Lots are evaluated as a second exposure point and are assumed to be exposed to shallow groundwater via dermal contact and to trench air via inhalation of volatile compounds released from groundwater.

Data Used

Analytical soil data collected by BETA and TRC between September 2004 and July 2011 from the Nemasket Street utility easement were considered for use in the Method 3 risk calculations. Sample locations with non-detect or below natural soil background levels of chemicals were excluded from the data set, consistent with the approach used for the Phase II risk characterization. In addition, data from soil sampling locations SB-NM-25 (to a depth of 7 feet bgs) and NS25 (to a depth of 8 feet bgs) were removed from the risk characterization data set because they were assumed to be excavated as part of the remedy due to elevated total PCB concentrations. Tables 1 and 2 present summaries of the analytical data for the 0 to 6 foot soil interval and 0 to 15 foot soil interval, respectively, for the Nemasket Street utility easement, applicable to potential utility worker exposures given the depths of existing utilities in the easement. Attachment 1, Tables 1 and 2, present the data sets for the 0 to 6 foot and 0 to 15 foot soil intervals.

Groundwater data collected from monitoring wells MW-37 and MW-39 (2011) and KMS monitoring well MW-3 (2013/2014) were used to evaluate utility worker exposures within the Nemasket Street utility easement, due to the proximity of the monitoring wells to the easement. Shallow groundwater data for the utility easement are presented in Table 3. As presented in Table 4, groundwater data collected in 2011 from monitoring wells MW-37, MW-38 and MW-39 from the Nemasket Street Lots were used to evaluate utility worker exposures to shallow groundwater and trench air within the clean utility corridors.

Compounds Evaluated

As described by MassDEP, compounds with maximum detected concentrations below MassDEP-published natural soil background concentrations are not evaluated in the risk characterization because their concentrations are consistent with those seen in unimpacted areas. Therefore, the compounds evaluated for these Method 3 risk calculations are those with individual detected concentrations in excess of MassDEP established background concentrations or detected compounds for which background concentrations have not been established. All compounds detected in shallow groundwater were considered groundwater chemicals of potential concern (COPCs). In addition, all volatile compounds detected in soil and shallow groundwater were considered COPCs for the trench air inhalation pathway.

Hot Spots

Soil data from the Nemasket Street utility easement were evaluated for the presence of hot spots. Groundwater data were not evaluated for the presence of hot spots since maximum detected concentrations were used as exposure point concentrations (EPCs).

A hot spot is defined in the MCP as a discrete area where the chemical concentrations are substantially higher than those present in the surrounding area. A discrete area where the average concentration within the area is greater than ten but less than one hundred times the average concentration in the immediate surrounding area is a hot spot unless there is no evidence that the

discrete area would be associated with greater exposure potential than the surrounding area. In all cases, a discrete area where the chemical concentration is greater than one hundred times the concentration in the surrounding area is to be considered a hot spot. The identification of hot spots is performed to minimize the likelihood that a location with significantly elevated chemical concentrations will be diluted by combining it with locations of lesser chemical concentrations in the evaluation.

As further stated in the MCP, in no case should chemical concentrations equal to or less than an applicable MCP Method 1 soil standard be considered indicative of a hot spot. Therefore, 11 chemicals for the 0 to 6 foot interval (Table 1) and 11 chemicals for the 0 to 15 foot interval (Table 2) were included in the hot spot analysis as all other detected chemicals were present at levels less than applicable MCP Method 1 soil standards or maximum detected concentrations were used as EPCs.

The following table shows the maximum detected concentration of each of the compounds included in the hot spot analysis, the average exposure point concentration for each soil interval excluding the maximum detection(s), and the variance between the maximum concentration and the average concentration. Soils within the entire 0 to 6 foot or 0 to 15 foot depth intervals will be equally accessible to utility workers should excavations be necessary at either of the exposure points.

Chemical	Maximum Concentration (mg/kg)	Average Concentration Excluding Maximum (mg/kg)	Variance (Maximum versus Average Excluding Maximum)
0 to 6 Foot Soil Interval			
Naphthalene	36	1.23	29-fold
Benzo(a)anthracene	37	5.90	6-fold
Benzo(a)pyrene	25	4.96	5-fold
Benzo(b)fluoranthene	36	6.37	6-fold
Dibenz(a,h)anthracene	6.1	0.78	8-fold
Indeno(1,2,3-cd)pyrene	15	2.91	5-fold
Total PCBs	62.3	9,46	7-fold
Arsenic	83	13.36	6-fold
Barium	3,860	591	7-fold
Lead	4,900	873	6-fold
Zinc	1,550	366	4-fold
0 to 15 Foot Soil Interval			
Naphthalene	36	1.08	33-fold
Benzo(a)anthracene	37	5.00	7-fold
Benzo(a)pyrene	25	4.21	6-fold
Benzo(b)fluoranthene	36	5.41	7-fold
Dibenz(a,h)anthracene	6.1	0.70	9-fold
Indeno(1,2,3-cd)pyrene	15	2.49	6-fold
Total PCBs	62.3	8.64	7-fold
Arsenic	83	12.4	7-fold
Barium	3,860	540	7-fold

Lead	4,900	795	6-fold
Zinc	1,550	312	5-fold

As shown above, the maximum concentrations of the compounds selected for evaluation for both soil intervals vary from the average concentrations by less than 100-fold. Therefore, no hot spots as defined by the MCP were identified.

Exposure Point Concentrations

EPCs for soil were determined consistent with 310 CMR 40.0926 and supporting MassDEP guidance. An EPC is the measured or estimated amount of a constituent in the environmental medium of concern at the point of human contact. Based on MassDEP (1995) guidance, the EPCs for the environmental media typically correspond to the arithmetic mean of the reported results for each data set for areas of contiguous impacts over which people average their exposure. Therefore, arithmetic average concentrations have been primarily used as soil EPCs; however, in accordance with MCP requirements, in those instances where individual chemicals were present at concentrations greater than ten times applicable standards or where greater than 25-percent of the analytical results for an individual chemical exceeded an applicable standard, EPCs that represent the 95-percent upper confidence limit of the arithmetic mean were calculated using EPA's ProUCL software version 5.0.00 (EPA, 2013). The 95-percent upper confidence limit recommended by the ProUCL software was selected as the EPC in these cases. For small data sets or in cases with the arithmetic average concentration or the 95-percent upper confidence limit exceeded the maximum detected concentration, the maximum detected concentration was used as the EPC. EPCs are provided in Tables 1 and 2 for the 0 to 6 and 0 to 15 foot soil intervals, respectively. ProUCL outputs, documenting the calculation of 95%-percent upper confidence limits, are provided in Attachment 2.

For shallow groundwater, maximum detected concentrations, as presented in Tables 3 and 4, were used as EPCs for the Nemasket Street Utility Easement and Nemasket Street Lots, respectively.

Exposure Assumptions

Utility worker exposure to soil were quantitatively evaluated primarily using exposure assumptions provided in the MassDEP construction worker Shortform (MassDEP, 2015). Exposure to utility workers could occur during excavations that expose impacted soil. Potential exposures to soil COPCs are assumed to occur 8 hours/day for 1 day/week. Utility workers are identified as adults (58 kg average body weight) involved in physical activities equivalent to an average inhalation rate of 20 cubic meters per day (m^3/day). Inhalation of fugitive dusts outdoors by construction workers was evaluated using a PM_{10} of 60 micrograms per cubic meter (µg/m^3) (MassDEP, 2008c). The incidental ingestion rate of soil was set at 100 mg/day. Dermal contact with soil COPCs was assumed via the face, hands, forearms, and feet (approximate surface area of 3,477 cm^2) using a soil adherence factor of 0.29 mg/cm^2. MassDEP's Construction Worker Shortform was used to evaluate soil exposures for this receptor, with the exposure frequency adjusted to 1 day/week. Excavations were assumed to proceed down to the water table. Contact with shallow groundwater was conservatively assumed to occur 8 hours/day for 65 days/year. Dermal contact with groundwater COPCs was also assumed to occur via the face, hands, forearms, and feet, consistent with soil exposures. Modeling of volatile compounds released from soil and groundwater into an excavation trench was performed using assumptions presented in Attachment 3. Inhalation of trench air was conservatively assumed to occur 8 hours/day for 130 days/year. The specific equations used to calculate exposures are provided on the Shortforms and risk calculation spreadsheets presented in Attachment 4.

Toxicity Values

Subchronic reference doses (RfDs) and reference concentrations (RfCs), used to evaluate non-carcinogenic health endpoints, slope factors (SFs) and unit risk (UR) values, used to evaluate carcinogenic effects, and relative absorption factors (RAFs) used in this risk characterization are the same as those values used by MassDEP in the development of the MCP numerical standards (MassDEP, 2015), except for 1,3,5-trimethylbenzene. For this compound, toxicity values and RAFs for C9-C10 aromatics, as specified by MassDEP, were used since this compound is included as part of this petroleum fraction, based on chemical structure and carbon chain length.
RfDs, RfCs, SFs, URs and RAFs are provided on the Shortforms and risk calculation spreadsheets presented in Attachment 4.

Risk Characterization

To characterize the risk of harm to utility workers from potential soil and/or shallow groundwater exposures, carcinogenic risks and non-carcinogenic hazards were estimated using the soil, groundwater and modeled trench air EPCs for each chemical selected for evaluation for the two exposure points. Risks and hazards associated with soil exposures were summed to the risks and hazards calculated shallow groundwater and trench air exposures to account for cumulative multi-media effects. The cumulative receptor risk values were compared to the MassDEP Risk Limits (Excess Lifetime Cancer Risk [ELCR] Limit of 1×10^{-5} and Non-Carcinogenic Hazard Index [HI] Risk Limit of 1) to assess whether a condition of "No Significant Risk" exists. If the cumulative HI exceeded the Risk Limit of 1, the cumulative HI was segregated by target organ, as described in MassDEP guidance (MassDEP, 1995). Each target organ HI was then compared to the Risk Limit of 1 to establish whether a condition of "No Significant Risk" exists at the Site.

The cumulative risks and hazards estimated for the utility worker at the Nemasket Street utility easement and Nemasket Street Lots are summarized in Table 5, assuming exposure to the 0 to 6 and 0 to 15 foot soil intervals, shallow groundwater and trench air for the Nemasket Street utility easement and shallow groundwater and trench air for the Nemasket Street Lots.

As shown on Table 5, a condition of No Significant Risk exists for the 1-day emergency utility worker at the Nemasket Street utility easement for both the 0 to 6 and 0 to 15 foot soil intervals. In addition, a condition of No Significant Risk exists for the 130-day (6 month) utility worker working within the clean utility corridors within the Nemasket Street Lots.

These risk calculations will be updated and the conclusions confirmed once remedy implementation has occurred.

Risk to Public Welfare

In order to achieve a permanent solution, MCP Upper Concentration Limits (UCLs) need to be met, based on a comparison to soil and groundwater EPCs. As shown in Tables 1 through 4 for soil within the utility easement and shallow groundwater within the utility easement and across the Nemasket Street Lots, EPCs do not exceed MCP UCLs. Soil beneath the to-be-constructed cap on the Nemasket Street Lots has not been evaluated for direct contact utility worker exposures because clean corridors will be constructed during remedy implementation. However, because contaminated soil will remain outside the clean utility corridors, soil EPCs have been calculated for the 0 to 15 foot interval for the

area within the Nemasket Street Lots property boundary and for the soil volume on the KMS property that will become part of the athletic fields. The data set for the 0 to 15 foot soil interval for the Nemasket Street Lots is presented in Attachment 5, Table 1. This data set does not contain data from soil sampling locations that were assumed to be excavated to various depths as part of the remedy (SB-NM-2 [to 11'], SB-NM-3 [to 13'], SB-NM-16 [to 3'], SB-NM-19 [to 11'], SB-NM-24 [to 8'], SB-NM-25 [to 7'], Bethel-1 [to 8.5'] and Bethel-4 [to 4']). The EPCs are compared to MCP UCLs in Attachment 5, Table 2. ProUCL outputs for the 95-percent upper confidence limits are provided in Attachment 2. The data set for the 0 to 15 foot soil interval for the KMS area is presented in Attachment 5, Table 3, as compared to MCP UCLs. No EPCs for the 0-15 foot interval on the Nemasket Street Lots exceed MCP UCLs. In addition, no individual concentrations contaminants on the KMS area that will become part of the athletic field exceed MCP UCLs, except for a detected concentration of barium of 18,000 mg/kg (MCP UCL of 10,000 mg/kg). Because of this exceedance, Table 4 in Attachment 5 presents a barium EPC for the KMS area; the EPC is less than its MCP UCL. Due to the lack of UCL exceedances, a permanent solution can be achieved using the selected remedial alternative.

Tables/Attachments

Table 1 – Summary Statistics for Soil Samples - 0 to 6 Foot Interval
Table 2 - Summary Statistics for Soil Samples - 0 to 15 Foot Interval
Table 3 – Summary Statistics for Shallow Groundwater – Nemasket Street Utility Easement
Table 4 – Summary Statistics for Shallow Groundwater – Nemasket Street Lots
Table 5 – Summary of Utility Worker Risks and Hazards

Attachment 1 – Soil Data for Nemasket Street Utility Easement
Attachment 2 – ProUCL Outputs
Attachment 3 – Trench Air Modeling
Attachment 4 – Shortforms and Risk Calculation Spreadsheets
Attachment 5 – Comparison of Nemasket Street Lots and Keith Middle School Soil Data to MCP UCLs

References

MassDEP, 1995. Massachusetts Department of Environmental Protection (MassDEP), 1995. Bureau of Waste Site Cleanup and Office of Research and Standards. Guidance for Disposal Site Risk Characterization In Support of the Massachusetts Contingency Plan. BWSC/ORS-95-141. July 1995.

MassDEP, 2002. Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in Soil. Final Technical Update. May 2002.

MassDEP, 2014. Massachusetts Contingency Plan, 310 CMR 40.0000, effective date, June 25, 2014.

MassDEP, 2015. Shortforms for Human Health Risk Assessment under the MCP. March 2015.

EPA, 2013 ProUCL Version 5.0.00 September 2013. http://www.epa.gov/osp/hstl/tsc/software.htm

TABLES

Table 1. Summary Statistics for Soil Samples -- 0-6' bgs
Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-2	S-1/GW-3	UCL*	Background	# of Samples	# of Detects	Freq. of Detects	Min. of Detects (mg/kg)	Max. of Detects (mg/kg)	Location of Max. Detected	Min. of Non-Detects (mg/kg)	Max. of Non-Detects (mg/kg)	Mean Concentration (mg/kg)	EPC (mg/kg)	EPC Rationale
VOCs																
	1,3,5-Trimethylbenzene	100(1)	100(1)	5,000(1)	NA	2	1	50.0%	0.0084	0.0084	TRC TP-7	0.0034	0.0034	5.0E-03	8.4E-03	Maximum of detects
VPH																
	C9-C12 Aliphatics	1,000	1,000	20,000	NA	2	1	50.0%	25	25	TRC TP-7	35	35	2.1E+01	2.1E+01	Mean
	C9-C10 Aromatics	100	100	5,000	NA	2	1	50.0%	25	25	TRC TP-7	35	35	2.1E+01	2.1E+01	Mean
	Ethylbenzene	500	500	10,000	NA	2	1	50.0%	3.8	3.8	TRC TP-7	0.0034	0.0034	1.9E+00	1.9E+00	Mean
	Naphthalene	20	500	10,000	0.5	22	6	27.3%	0.43	36	NM-ROW-3	0.088	1.8	2.8E+00	2.8E+00	Mean
	Toluene	500	500	10,000	NA	2	1	50.0%	1.5	1.5	TRC TP-7	0.0034	0.0034	7.5E-01	7.5E-01	Mean
	Xylenes	100	500	10,000	NA	2	2	100.0%	0.35	19.5	TRC TP-7	--	--	9.9E+00	9.9E+00	Mean
EPH																
	C9-C18 Aliphatics	1,000	1,000	20,000	NA	3	1	33.3%	18	18	TRC TP-7	63	63	2.7E+01	1.8E+01	Maximum of detects
	C19-C36 Aliphatics	3,000	3,000	20,000	NA	3	3	100.0%	41	580	TRC TP-9	--	--	3.9E+02	3.9E+02	Mean
	C11-C22 Aromatics	1,000	1,000	10,000	NA	3	3	100.0%	460	840	TRC TP-9	--	--	6.9E+02	6.9E+02	Mean
SVOCs																
	Acenaphthene	1,000	1,000	10,000	0.5	22	11	50.0%	0.11	8.2	TRC TP-9	0.19	1.8	1.6E+00	1.6E+00	Mean
	Acenaphthylene	600	10	10,000	0.5	22	3	13.6%	0.51	4.4	NM-ROW-2	0.088	1.8	4.7E-01	4.7E-01	Mean
	Anthracene	1,000	1,000	10,000	1	22	17	77.3%	0.25	22	TRC TP-9	0.19	0.39	4.6E+00	4.6E+00	Mean
	Benzo(a)anthracene	7	7	3,000	2	22	20	90.9%	0.45	37	TRC TP-9	0.19	0.38	7.3E+00	1.7E+01	95% Chebyshev (Mean, Sd) UCL
	Benzo(a)pyrene	2	2	300	2	22	20	90.9%	0.46	25	TRC TP-9	0.19	0.38	5.9E+00	1.3E+01	95% Chebyshev (Mean, Sd) UCL
	Benzo(b)fluoranthene	7	7	3,000	2	22	21	95.5%	0.4	36	TRC TP-9	0.19	0.19	7.7E+00	1.8E+01	95% Chebyshev (Mean, Sd) UCL
	Benzo(g,h,i)perylene	1,000	1,000	10,000	1	22	19	86.4%	0.4	14	TRC TP-9	0.19	0.39	3.1E+00	3.1E+00	Mean
	Benzo(k)fluoranthene	70	70	10,000	1	22	20	90.9%	0.25	14	TRC TP-9	0.19	0.38	3.0E+00	3.0E+00	Mean
	Chrysene	70	70	10,000	2	22	20	90.9%	0.49	36	TRC TP-9	0.19	0.38	7.6E+00	7.6E+00	Mean
	Dibenz(a,h)anthracene	0.7	0.7	300	0.5	22	9	40.9%	0.1825	6.1	TRC TP-9	0.088	2	1.0E+00	1.0E+00	Mean
	Fluoranthene	1,000	1,000	10,000	4	22	22	100.0%	0.19	82	TRC TP-9	--	--	1.6E+01	1.6E+01	Mean
	Fluorene	1,000	1,000	10,000	1	22	15	68.2%	0.089	13	NM-ROW-3	0.19	0.43	2.7E+00	2.7E+00	Mean
	Indeno(1,2,3-cd)pyrene	7	7	3000	1	22	19	86.4%	0.41	15	TRC TP-9	0.19	0.39	3.5E+00	3.5E+00	Mean
	2-Methylnaphthalene	80	300	5,000	0.5	22	5	22.7%	1.5	9	NM-ROW-3	0.088	1.8	1.1E+00	1.1E+00	Mean
	Phenanthrene	500	500	10,000	3	22	21	95.5%	0.43	82	TRC TP-9	0.19	0.19	1.8E+01	1.8E+01	Mean
	Pyrene	1,000	1,000	10,000	4	22	19	86.4%	0.66	75	TRC TP-9	0.11	0.38	1.4E+01	1.4E+01	Mean
PCBs																
	Total PCBs	1	1	100	NA	44	40	90.9%	0.27	62.3	NM-ROW-4	--	--	1.1E+01	1.5E+01	95% Adjusted Gamma UCL
Metals, total																
	Arsenic	20	20	500	20	35	30	85.7%	1.81	83	NS6,7,8,9	2.6	2.8	1.5E+01	1.5E+01	Mean
	Barium	1,000	1,000	10,000	50	35	35	100.0%	19	3860	NS2, 3	--	--	6.8E+02	6.8E+02	Mean
	Beryllium	90	90	2,000	0.4	17	1	5.9%	0.45	0.45	NM-ROW-4	0.26	0.34	1.7E-01	1.7E-01	Mean
	Cadmium	70	70	1000	2	35	31	88.6%	0.31	30	NS 21,22,23	0.26	0.28	5.0E+00	5.0E+00	Mean
	Chromium (III)	1,000	1,000	10,000	30	35	35	100.0%	5	385	NS2, 3	--	--	8.7E+01	8.7E+01	Mean
	Lead	200	200	6,000	100	35	35	100.0%	41	4900	NS 18,19,20	--	--	9.9E+02	1.4E+03	95% Adjusted Gamma UCL
	Mercury	20	20	300	0.3	35	35	100.0%	0.063	1.9	NS 24,25,26	--	--	7.5E-01	7.5E-01	Mean
	Nickel	600	600	10,000	20	17	17	100.0%	2.8	65	NM-ROW-2	--	--	2.3E+01	2.3E+01	Mean
	Silver	100	100	2,000	0.6	35	12	34.3%	0.38	4.16	NS6,7,8,9	0.06	3.2	7.2E-01	7.2E-01	Mean
	Vanadium	400	400	7,000	30	17	17	100.0%	8.8	210	NM-ROW-4	--	--	5.1E+01	5.1E+01	Mean
	Zinc	1,000	1,000	10,000	100	17	17	100.0%	40	1550	SB-NM-36	--	--	4.4E+02	4.4E+02	Mean

Notes:

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

NA - Not applicable.

Boxed maxima exceed natural soil background.

VOCs - Volatile Organic Compounds.

EPH - Extractable Petroleum Hydrocarbons.

VPH - Volatile Petroleum Hydrocarbons.

SVOCs - Semi-Volatile Organic Compounds.

PCBs - Polychlorinated Biphenyls.

(1) Standard for C9-C10 aliphatics used.

EPC - Exposure Point Concentration.

UCL* - Upper concentration limit.

UCL - Upper confidence limit.

* - Background Concentration for natural soil.

Table 2. Summary Statistics for Soil Samples -- 0-15' bgs
Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-2	S-1/GW-3	UCL*	Background	# of Samples	# of Detects	Freq. of Detects	Min. of Detects (mg/kg)	Max. of Detects (mg/kg)	Location of Max. Detected	Min. of Non-Detects (mg/kg)	Max. of Non-Detects (mg/kg)	Mean Concentration (mg/kg)	EPC (mg/kg)	EPC Rationale
VOCs																
	1,3,5-Trimethylbenzene	100(1)	100(1)	5,000(1)	NA	2	1	50.0%	0.0084	0.0084	TRC TP-7	0.0034	0.0034	5.0E-03	8.4E-03	Maximum of detects
VPH																
	C9-C12 Aliphatics	1,000	1,000	20,000	NA	2	1	50.0%	25	25	TRC TP-7	35	35	2.1E+01	2.1E+01	Mean
	C9-C10 Aromatics	100	100	5,000	NA	2	1	50.0%	25	25	TRC TP-7	35	35	2.1E+01	2.1E+01	Mean
	Ethylbenzene	500	500	10,000	NA	2	1	50.0%	3.8	3.8	TRC TP-7	0.0034	0.0034	1.9E+00	1.9E+00	Mean
	Naphthalene	20	500	10,000	0.5	26	6	23.1%	0.43	36	NM-ROW-3	0.088	1.8	2.4E+00	2.4E+00	Mean
	Toluene	500	500	10,000	NA	2	1	50.0%	1.5	1.5	TRC TP-7	0.0034	0.0034	7.5E-01	7.5E-01	Mean
	Xylenes	100	500	10,000	NA	2	2	100.0%	0.35	19.5	TRC TP-7	--	--	9.9E+00	9.9E+00	Mean
EPH																
	C9-C18 Aliphatics	1,000	1,000	20,000	NA	3	1	33.3%	18	18	TRC TP-7	63	63	2.7E+01	1.8E+01	Maximum of detects
	C19-C36 Aliphatics	3,000	3,000	20,000	NA	3	3	100.0%	41	580	TRC TP-9	--	--	3.9E+02	3.9E+02	Mean
	C11-C22 Aromatics	1,000	1,000	10,000	NA	3	3	100.0%	460	840	TRC TP-9	--	--	6.9E+02	6.9E+02	Mean
SVOCs																
	Acenaphthene	1,000	1,000	10,000	0.5	26	11	42.3%	0.11	8.2	TRC TP-9	0.19	1.8	1.4E+00	1.4E+00	Mean
	Acenaphthylene	600	10	10,000	0.5	26	3	11.5%	0.51	4.4	NM-ROW-2	0.088	1.8	4.4E-01	4.4E-01	Mean
	Anthracene	1,000	1,000	10,000	1	26	17	65.4%	0.25	22	TRC TP-9	0.19	0.77	4.0E+00	4.0E+00	Mean
	Benzo(a)anthracene	7	7	3,000	2	26	20	76.9%	0.45	37	TRC TP-9	0.19	0.77	6.2E+00	6.2E+00	Mean
	Benzo(a)pyrene	2	2	300	2	26	20	76.9%	0.46	25	TRC TP-9	0.19	0.77	5.0E+00	1.1E+01	95% Chebyshev (Mean, Sd) UCL
	Benzo(b)fluoranthene	7	7	3,000	2	26	21	80.8%	0.4	36	TRC TP-9	0.19	0.77	6.6E+00	6.6E+00	Mean
	Benzo(g,h,i)perylene	1,000	1,000	10,000	1	26	19	73.1%	0.4	14	TRC TP-9	0.19	0.77	2.6E+00	2.6E+00	Mean
	Benzo(k)fluoranthene	70	70	10,000	1	26	20	76.9%	0.25	14	TRC TP-9	0.19	0.77	2.6E+00	2.6E+00	Mean
	Chrysene	70	70	10,000	2	26	20	76.9%	0.49	36	TRC TP-9	0.19	0.77	6.5E+00	6.5E+00	Mean
	Dibenz(a,h)anthracene	0.7	0.7	300	0.5	26	9	34.6%	0.1825	6.1	TRC TP-9	0.088	2	9.0E-01	9.0E-01	Mean
	Fluoranthene	1,000	1,000	10,000	4	26	22	84.6%	0.19	82	TRC TP-9	0.21	0.77	1.4E+01	1.4E+01	Mean
	Fluorene	1,000	1,000	10,000	1	26	15	57.7%	0.089	13	TRC TP-9	0.19	0.77	2.3E+00	2.3E+00	Mean
	Indeno(1,2,3-cd)pyrene	7	7	3000	1	26	19	73.1%	0.41	15	TRC TP-9	0.19	0.77	3.0E+00	3.0E+00	Mean
	2-Methylnaphthalene	80	300	5,000	0.5	26	5	19.2%	1.5	9	TRC TP-9	0.088	1.8	9.7E-01	9.7E-01	Mean
	Phenanthrene	500	500	10,000	3	26	21	80.8%	0.43	82	TRC TP-9	0.19	0.77	1.5E+01	1.5E+01	Mean
	Pyrene	1,000	1,000	10,000	4	26	19	73.1%	0.66	75	TRC TP-9	0.11	0.77	1.2E+01	1.2E+01	Mean
PCBs																
	Total PCBs	1	1	100	NA	48	43	89.6%	0.118	62.3	NM-ROW-4	0.173	0.173	9.8E+00	2.0E+01	95% Chebyshev (Mean, Sd) UCL
Metals, total																
	Arsenic	20	20	500	20	39	30	76.9%	1.81	83	NS6,7,8,9	2.6	12	1.4E+01	1.4E+01	Mean
	Barium	1,000	1,000	10,000	50	39	39	100.0%	19	3860	NS2, 3	--	--	6.2E+02	6.2E+02	Mean
	Beryllium	90	90	2,000	0.4	21	1	4.8%	0.45	0.45	NM-ROW-4	0.26	1.2	2.1E-01	2.1E-01	Mean
	Cadmium	70	70	1000	2	39	32	82.1%	0.31	30	NS 21,22,23	0.26	1.2	4.6E+00	4.6E+00	Mean
	Chromium (III)	1,000	1,000	10,000	30	39	39	100.0%	5	385	NS2, 3	--	--	8.0E+01	8.0E+01	Mean
	Lead	200	200	6,000	100	39	39	100.0%	35	4900	NS 18,19,20	--	--	9.0E+02	1.2E+03	95% Adjusted Gamma UCL
	Mercury	20	20	300	0.3	39	36	92.3%	0.063	1.9	NS 24,25,26	0.01	0.11	6.8E-01	6.8E-01	Mean
	Nickel	600	600	10,000	20	21	21	100.0%	2.8	65	NM-ROW-2	--	--	2.1E+01	2.1E+01	Mean
	Silver	100	100	2,000	0.6	39	12	30.8%	0.38	4.16	NS6,7,8,9	0.06	3.2	7.2E-01	7.2E-01	Mean
	Vanadium	400	400	7,000	30	21	21	100.0%	8.8	210	NM-ROW-4	--	--	4.4E+01	4.4E+01	Mean
	Zinc	1,000	1,000	10,000	100	21	21	100.0%	20	1550	SB-NM-36	--	--	3.7E+02	3.7E+02	Mean

Notes:

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

NA - Not applicable.

Boxed maxima exceed natural soil background.

VOCs - Volatile Organic Compounds.

EPH - Extractable Petroleum Hydrocarbons.

VPH - Volatile Petroleum Hydrocarbons.

SVOCs - Semi-Volatile Organic Compounds.

PCBs - Polychlorinated Biphenyls.

(1) Standard for C9-C10 aliphatics used.

EPC - Exposure Point Concentration.

UCL* - Upper concentration limit.

UCL - Upper confidence limit.

* - Background Concentration for natural soil.

Table 3. Summary Statistics for Shallow Groundwater Samples
Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	Sample Location:			Nemasket Street Utility Easement						EPC (ug/L)	EPC Rationale
		Sample ID:			MW-37		MW-39		MW-3			
		Sample Date:			1/13/2011	12/1/2011	1/13/2011 combo	12/1/2011 combo	10/25/2013 combo	5/22/2014 combo		
		GW-2	GW-3	UCL*								
VOCs												
(ug/L)	Trichloroethene	5	5,000	50,000	NA	**1.1**	NA	1.0 U	NA	NA	1.1	Maximum of Detects
Metals, total												
(ug/L)	Arsenic	NS	900	9,000	0.40 U	NA	0.40 U	NA	NA	NA	NA	Dissolved Result Used
	Barium	NS	50,000	100,000	**170**	NA	**50**	NA	NA	NA	NA	Dissolved Result Used
	Chromium	NS	300	3,000	1.0 U	NA	**0.95 J**	NA	NA	NA	NA	Dissolved Result Used
	Lead	NS	10	150	1.0 U	NA	1.0 U	NA	NA	NA	NA	Dissolved Result Used
	Nickel	NS	200	2,000	**8.9**	NA	**4.0 J**	NA	NA	NA	NA	Dissolved Result Used
	Zinc	NS	900	50,000	**45**	NA	**24**	NA	NA	NA	NA	Dissolved Result Used
Metals, dissolved												
(ug/L)	Arsenic	NS	900	9,000	0.40 U	NA	0.40 U	NA	**0.925**	**0.64**	0.925	Maximum of Detects
	Barium	NS	50,000	100,000	**150**	NA	**48**	NA	**300**	**125**	300	Maximum of Detects
	Chromium	NS	300	3,000	0.5 U	NA	0.5 U	NA	1.0 U	**1.5**	1.5	Maximum of Detects
	Lead	NS	10	150	1.0 U	NA	1.0 U	NA	1.0 U	**6.3**	6.3	Maximum of Detects
	Nickel	NS	200	2,000	**12**	NA	5.0 U	NA	NA	NA	12	Maximum of Detects
	Zinc	NS	900	50,000	**47**	NA	**21**	NA	NA	NA	47	Maximum of Detects

Notes:
ug/L - micrograms per liter.
NA - Sample not analyzed for the listed analyte.
J - Estimated value.
U - Compound was not detected at specified quantitation limit.
EPC - Exposure Point Concentration.
UCL* - Upper Concentration Limit.
Values in **Bold** indicate the compound was detected.
VOCs - Volatile Organic Compounds.

Table 4. Summary Statistics for Shallow Groundwater Samples
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample Location:			Nemasket Street Lots						EPC (ug/L)	EPC Rationale
		Sample ID:			MW-37		MW-38		MW-39			
		Sample Date:			1/13/2011	12/1/2011	1/13/2011	12/1/2011	1/13/2011 combo	12/1/2011 combo		
		GW-2	GW-3	UCL*								
VOCs												
(ug/L)	Tetrachloroethene	50	30,000	100,000	NA	1.0 U	NA	**13**	NA	1.0 U	13	Maximum of Detects
	Trichloroethene	5	5,000	50,000	NA	**1.1**	NA	**2.4**	NA	1.0 U	2.4	Maximum of Detects
	cis-1,2-Dichloroethene	20	50,000	100,000	NA	1.0 U	NA	**3.0**	NA	1.0 U	3	Maximum of Detects
Metals, total												
(ug/L)	Arsenic	NS	900	9,000	0.40 U	NA	**0.96**	NA	0.40 U	NA	0.96	Maximum of Detects
	Barium	NS	50,000	100,000	**170**	NA	**240**	NA	**50**	NA	240	Maximum of Detects
	Chromium	NS	300	3,000	1.0 U	NA	1.0 U	NA	**0.95 J**	NA	0.95	Maximum of Detects
	Nickel	NS	200	2,000	**8.9**	NA	**6.1**	NA	**4.0 J**	NA	NA	Dissolved Result Used
	Zinc	NS	900	50,000	**45**	NA	**37**	NA	**24**	NA	NA	Dissolved Result Used
Metals, dissolved												
(ug/L)	Arsenic	NS	900	9,000	0.40 U	NA	**0.93**	NA	0.40 U	NA	NA	Total Result Used
	Barium	NS	50,000	100,000	**150**	NA	**240**	NA	**48**	NA	NA	Total Result Used
	Nickel	NS	200	2,000	**12**	NA	**6.2**	NA	5.0 U	NA	12	Maximum of Detects
	Zinc	NS	900	50,000	**47**	NA	**30**	NA	**21**	NA	47	Maximum of Detects

Notes:
ug/L - micrograms per liter.
NA - Sample not analyzed for the listed analyte.
U - Compound was not detected at specified quantitation limit.
J - Estimated value.
EPC - Exposure Point Concentration.
UCL* - Upper Concentration Limit.
Values in **Bold** indicate the compound was detected.
VOCs - Volatile Organic Compounds.

Table 5
Summary of Utility Worker Risks and Hazards
Nemasket Street Utility Easement and Nemasket Street Lots
New Bedford, Massachusetts

Exposure Point	Scenario/ Receptor	Exposure Media	Exposure Pathway	ELCR	HI	Major contributors to risk/hazard
Nemasket Street Utility Easement	1-Day Emergency Utility Worker	0-6' Soil	Ingestion	1E-07	3E-01	N/A
			Dermal	1E-07	1E-01	
			Inhalation	9E-09	4E-02	
		Trench Air	Inhalation	1E-10	3E-03	
		Shallow Groundwater	Dermal	2E-09	6E-03	
			Total	3E-07	5E-01	
		0-15' Soil	Ingestion	1E-07	3E-01	N/A
			Dermal	1E-07	1E-01	
			Inhalation	9E-09	4E-02	
		Trench Air	Inhalation	1E-10	3E-03	
		Shallow Groundwater	Dermal	2E-09	6E-03	
			Total	3E-07	5E-01	
Nemasket Street Lots	6-Month Utility Worker	Trench Air	Inhalation	1E-09	7E-03	N/A
		Shallow Groundwater	Dermal	1E-08	2E-02	
			Total	2E-08	3E-02	

Notes
Bolded values exceed a cancer risk of 1E-05 or a target organ HI of 1.
HI - Hazard Index
ELCR - Excess Lifetime Cancer Risk
N/A - Not Applicable

ATTACHMENT 1

SOIL DATA FOR NEMASKET STREET UTILITY EASEMENT

Table 1. Summary of Analytical Results for Soil Samples -- 0-6' bgs
Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				IW-1	IW-2	NM-ROW-1			NM-ROW-2			NM-ROW-3			NM-ROW-4			SB-NM-36		SB-NM-37	SB-NM-38	
		Sample Depth (ft.):				0-0.5	0-0.5	0-1	1-3	5-7	0-1	1-3	5-7	0-1	1-3	5-7	0-1	1-3	5-7	0-1	1-3	0-1	0-1	1-3
		Sample Date:				12/23/2004	12/23/2004	3/24/2011	3/24/2011	3/24/2011 combo	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	6/10/2011	6/10/2011 combo	6/10/2011	7/6/2011	7/6/2011
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																			
VOCs																								
(mg/kg)	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																								
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	20	500	20	1,000	0.088 U	0.11 U	0.19 U	0.38 U	0.22 U	0.38 U	**11**	**0.43**	0.43 U	0.20 U	**36**	0.18 U	0.40 U	1.8 U	0.37 U	0.465 U	0.20 U	0.39 U	0.38 U
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																								
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																								
(mg/kg)	Acenaphthene	1,000	1,000	3,000	3,000	**0.11**	**0.14**	0.19 U	0.38 U	0.22 U	**0.77**	**2.6**	0.22 U	0.43 U	0.20 U	**8.1**	**0.37**	0.40 U	1.8 U	0.37 U	**0.355 J**	**0.22**	0.39 U	0.38 U
	Acenaphthylene	600	10	600	10	0.088 U	0.11 U	0.19 U	0.38 U	0.22 U	0.38 U	**4.4**	0.22 U	0.43 U	0.20 U	**1.7**	0.18 U	0.40 U	1.8 U	0.37 U	0.465 U	0.20 U	0.39 U	0.38 U
	Anthracene	1,000	1,000	3,000	3,000	**0.25**	**0.44**	0.19 U	**0.98**	0.22 U	**1.6**	**9.6**	**0.68**	**0.71**	0.20 U	**21**	**0.67**	**1.1**	**7.7**	**0.44**	**1.4**	**0.59**	0.39 U	0.38 U
	Benzo(a)anthracene	7	7	40	40	**0.92**	**1.4**	0.19 U	**3.1**	**0.83**	**3.9**	**15**	**1.4**	**2.2**	**0.45**	**20**	**2.4**	**3.6**	**12**	**1.2**	**3.4**	**1.2**	**0.59**	0.38 U
	Benzo(a)pyrene	2	2	7	7	**0.93**	**1.4**	0.19 U	**2.9**	**1.2**	**3.6**	**14**	**1.3**	**1.9**	**0.46**	**17**	**2.2**	**3.0**	**8.9**	**1.0**	**2.5**	**0.96**	**0.60**	0.38 U
	Benzo(b)fluoranthene	7	7	40	40	**1.4**	**2.3**	0.19 U	**3.5**	**1.9**	**4.6**	**17**	**1.5**	**2.6**	**0.56**	**20**	**2.8**	**3.3**	**10**	**1.3**	**3.6**	**1.3**	**0.95**	**0.40**
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**0.49**	**0.82**	0.19 U	**1.6**	**0.58**	**1.8**	**5.2**	**0.57**	**0.84**	**0.40**	**6.0**	**1.6**	**1.9**	**4.6**	**0.59**	**0.99**	**0.80**	0.39 U	0.38 U
	Benzo(k)fluoranthene	70	70	400	400	**0.45**	**0.56**	0.19 U	**1.5**	**0.4025 J**	**1.8**	**7.0**	**0.61**	**1.0**	**0.25**	**7.1**	**1.1**	**1.2**	**4.4**	**0.49**	**1.2**	**0.46**	**0.40**	0.38 U
	Chrysene	70	70	400	400	**8.8**	**1.0**	0.19 U	**3.3**	**1**	**3.9**	**14**	**1.4**	**2.2**	**0.49**	**18**	**2.6**	**3.7**	**11**	**1.2**	**3.3**	**1.2**	**0.73**	0.38 U
	Dibenz(a,h)anthracene	0.7	0.7	4	4	0.088 U	0.11 U	0.19 U	0.38 U	**0.1825 J**	**0.43**	2.0 U	0.22 U	0.43 U	0.20 U	**1.7**	**0.44**	**0.56**	1.8 U	0.37 U	0.465 U	**0.23**	0.39 U	0.38 U
	Fluoranthene	1,000	1,000	3,000	3,000	**2.2**	**3.0**	**0.19**	**5.2**	**0.97**	**7.4**	**30**	**2.5**	**3.8**	**0.88**	**50**	**2.8**	**5.2**	**25**	**2.1**	**5.7**	**2.6**	**1.3**	**0.60**
	Fluorene	1,000	1,000	3,000	3,000	**0.089**	**0.14**	0.19 U	**0.41**	0.22 U	**0.70**	**6.1**	**0.33**	0.43 U	0.20 U	**13**	**0.38**	**0.56**	**2.8**	0.37 U	**0.46 J**	**0.28**	0.39 U	0.38 U
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**0.55**	**0.78**	0.19 U	**1.8**	**0.84**	**2.1**	**6.5**	**0.69**	**0.99**	**0.41**	**7.6**	**1.7**	**2.1**	**5.7**	**0.72**	**1.25**	**0.91**	0.39 U	0.38 U
	2-Methylnaphthalene	80	300	80	500	0.088 U	0.11 U	0.19 U	0.38 U	0.22 U	0.38 U	**4.7**	0.22 U	0.43 U	0.20 U	**9.0**	0.18 U	0.40 U	1.8 U	0.37 U	0.465 U	0.20 U	0.39 U	0.38 U
	Phenanthrene	500	500	1,000	1,000	**1.4**	**1.9**	0.19 U	**4.3**	**0.465**	**6.6**	**41**	**2.7**	**3.6**	**0.43**	**77**	**3.7**	**5.5**	**24**	**1.8**	**5.3**	**2.5**	**0.90**	**0.61**
	Pyrene	1,000	1,000	3,000	3,000	**1.6**	0.11 U	0.19 U	**4.8**	**0.66**	**4.9**	**22**	**1.9**	**2.8**	**0.86**	**45**	**2.5**	**6.2**	**19**	**2.3**	**5.3**	**2.4**	**0.85**	0.38 U
PCBs																								
(mg/kg)	Total PCBs	1	1	4	4	**0.27**	**5.71**	**1.54 J**	**17.0 J**	**1.239 J**	**3.83 J**	**23.9 J**	**0.806 J**	**3.82 J**	**0.399 J**	**0.832 J**	**0.767 J**	**61.9 J**	**62.3 J**	**8.7**	**14**	**3.0**	**0.32**	**1.1**
TEQ Summation																								
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																								
(mg/kg)	Arsenic	20	20	20	20	**1.81**	**6.38**	2.8 U	**29**	**15.5**	**3.4**	**7.4**	**17**	**3.5**	2.8 U	**12**	2.6 U	**6.2**	**15**	**4.8**	**12**	**3.6**	2.8 U	2.6 U
	Barium	1,000	1,000	3,000	3,000	**19**	**584**	**40**	**710**	**450**	**440**	**780**	**380**	**440**	**63**	**730**	**30**	**380**	**2,000**	**680**	**1,050**	**100**	**36**	**40**
	Beryllium	90	90	200	200	NA	NA	0.28 U	0.28 U	0.325 U	0.28 U	0.29 U	0.32 U	0.31 U	0.28 U	0.34 U	0.26 U	0.29 U	**0.45**	0.28 U	0.34 U	0.30 U	0.28 U	0.26 U
	Cadmium	70	70	100	100	**0.81**	**3.77**	0.28 U	**3.4**	**9.4**	**1.4**	**2.1**	**2.5**	**1.3**	0.28 U	**1.9**	0.26 U	**1.3**	**7.1**	**1.7**	**3.1**	**0.74**	**0.31**	0.26 U
	Chromium	100	100	200	200	**7.14**	**57**	**9.1**	**65**	**26**	**80**	**81**	**44**	**110**	**20**	**140**	**5.0**	**32**	**370**	**67**	**89**	**35**	**11**	**10**
	Lead	200	200	600	600	**44**	**560**	**100**	**860**	**760**	**370**	**1,100**	**2,000**	**370**	**380**	**420**	**83**	**610**	**2,000**	**480**	**740**	**220**	**41**	**47**
	Mercury	20	20	30	30	**0.063**	**0.835**	**0.076**	**1.6**	**0.74**	**0.25**	**1.1**	**1.5**	**0.73**	**0.12**	**0.32**	**0.16**	**0.73**	**1.0**	**0.82**	**1.3**	**0.38**	**0.064**	**0.13**
	Nickel	600	600	1000	1000	NA	NA	**5.3**	**28**	**34.5**	**12**	**27**	**65**	**26**	**12**	**41**	**2.8**	**14**	**57**	**17**	**25.5**	**9.7**	**7.7**	**7.5**
	Silver	100	100	200	200	0.06 U	**0.38**	0.55 U	0.56 U	0.655 U	0.56 U	0.59 U	3.2 U	0.62 U	0.57 U	0.67 U	0.52 U	0.58 U	0.68 U	0.56 U	0.68 U	0.59 U	0.56 U	0.52 U
	Vanadium	400	400	700	700	NA	NA	**13**	**46**	**24.5**	**67**	**60**	**44**	**63**	**19**	**85**	**8.8**	**28**	**210**	**59**	**78**	**32**	**13**	**11**
	Zinc	1,000	1,000	3,000	3,000	NA	NA	**40**	**500**	**570**	**240**	**550**	**1,000**	**250**	**44**	**640**	**46**	**330**	**880**	**360**	**1,550**	**320**	**46**	**41**

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
ND - Not detected.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
UA - Unknown.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards for C9-C10 aromatics used.

Table 1. Summary of Analytical Results for Soil Samples -- 0-6' bgs
Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				TRC TP-7	TRC TP-9		NS2		NS2, 3		NS4	NS5		NS4,5		NS6	NS7	NS8	NS9	NS6,7,8,9	
		Sample Depth (ft.):				0-3	3-5	5-7	0.5-4	4-8.5	Shallow	Deep	0.2-4	0.2-4	4-8.5	Shallow	Deep	0.2-4	0.3-4	0.3-4	0-4	Shallow	Deep
		Sample Date:				10/28/2010	10/29/2010	10/29/2010	9/24/2004	9/24/2004	9/24/2004	9/24/2004	9/24/2004	9/24/2004	9/24/2004	9/24/2004	9/24/2004	9/28/2004	9/28/2004	9/28/2004	9/28/2004	9/28/2004	9/28/2004
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																		
VOCs																							
(mg/kg)	1,3,5-Trimethylbenzene	100[1]	100[1]	500[1]	500[1]	**0.0084**	0.0034 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																							
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	**25**	35 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	**25**	35 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	**3.8**	0.0034 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	20	500	20	1,000	**2.9**	**2.9**	**5.6**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	500	500	1,000	1,000	**1.5**	0.0034 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	100	500	100	1,000	**20**	**0.35**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																							
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	**18**	63 U	63 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	**41**	**580**	**560**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	**460**	**840**	**780**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																							
(mg/kg)	Acenaphthene	1,000	1,000	3,000	3,000	**6.1**	**6.3**	**8.2**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	600	10	600	10	**0.51**	0.63 U	0.63 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	1,000	1,000	3,000	3,000	**10**	**22**	**22**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	7	7	40	40	**22**	**37**	**28**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	2	2	7	7	**17**	**25**	**23**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	7	7	40	40	**25**	**36**	**30**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**11**	**13**	**14**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	70	70	400	400	**9.1**	**14**	**12**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	70	70	400	400	**25**	**36**	**28**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	0.7	0.7	4	4	**3.5**	**5.8**	**6.1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	1,000	1,000	3,000	3,000	**57**	**82**	**64**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	1,000	1,000	3,000	3,000	**7.0**	**13**	**13**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**11**	**15**	**15**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	80	300	80	500	**1.5**	**2.2**	**3.5**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	500	500	1,000	1,000	**54**	**82**	**74**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	1,000	1,000	3,000	3,000	**54**	**75**	**60**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																							
(mg/kg)	Total PCBs	1	1	4	4	NA	**26**	NA	ND	**2.04**	NA	NA	**4.92**	ND	**2.99**	NA	NA	**2.145**	**8.74**	**3.30**	**14.16**	NA	NA
TEQ Summation																							
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																							
(mg/kg)	Arsenic	20	20	20	20	NA	NA	NA	NA	NA	**63**	**35**	NA	NA	NA	**20**	**27**	NA	NA	NA	NA	**20**	**83**
	Barium	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	**3,860**	**2,030**	NA	NA	NA	**656**	**783**	NA	NA	NA	NA	**635**	**3,680**
	Beryllium	90	90	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	70	70	100	100	NA	NA	NA	NA	NA	**7.05**	**5.55**	NA	NA	NA	**5.96**	**16**	NA	NA	NA	NA	**5.00**	**11**
	Chromium	100	100	200	200	NA	NA	NA	NA	NA	**86**	**385**	NA	NA	NA	**55**	**167**	NA	NA	NA	NA	**67**	**244**
	Lead	200	200	600	600	NA	NA	NA	NA	NA	**1,550**	**3,900**	NA	NA	NA	**3,260**	**903**	NA	NA	NA	NA	**658**	**1,260**
	Mercury	20	20	30	30	NA	NA	NA	NA	NA	**0.677**	**0.416**	NA	NA	NA	**1.03**	**0.531**	NA	NA	NA	NA	**0.64**	**1.03**
	Nickel	600	600	1000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	100	100	200	200	NA	NA	NA	NA	NA	**0.67**	**0.75**	NA	NA	NA	**0.68**	**1.34**	NA	NA	NA	NA	**4.16**	ND
	Vanadium	400	400	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
ND - Not detected.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
UA - Unknown.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards for C9-C10 aromatics used.

Table 1. Summary of Analytical Results for Soil Samples -- 0-6' bgs
Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				NS10	NS11			NS12		Comp NS10,11,12		NS13		NS15		NS16		NS17	NS15,16,17		NS18
		Sample Depth (ft.):				0.2-4	0-4	4-9	4-9	0-4	4-9	Shallow	Deep	0-4	4-9	0-4	4-8.25	0-4	4-8	0-4	Shallow	Deep	1-4
		Sample Date:				9/28/2004	9/28/2004	9/29/2004	9/29/2004 Field Dup	9/29/2004	9/29/2004	9/29/2004	9/29/2004	9/29/2004	9/29/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																		
VOCs																							
(mg/kg)	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																							
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	20	500	20	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																							
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																							
(mg/kg)	Acenaphthene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	600	10	600	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	2	2	7	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	70	70	400	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	70	70	400	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	0.7	0.7	4	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	80	300	80	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																							
(mg/kg)	Total PCBs	1	1	4	4	**5.38**	**3.00**	**2.10**	**1.86**	**61**	**3.50**	NA	NA	**9.60**	**7.35**	ND	**17.3**	ND	**8.25**	**12.20**	NA	NA	**16.10**
TEQ Summation																							
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																							
(mg/kg)	Arsenic	20	20	20	20	NA	NA	NA	NA	NA	NA	**19**	**11**	NA	NA	NA	NA	NA	NA	NA	**10**	**18**	NA
	Barium	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	**602**	**289**	NA	NA	NA	NA	NA	NA	NA	**320**	**160**	NA
	Beryllium	90	90	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	70	70	100	100	NA	NA	NA	NA	NA	NA	**4.12**	**4.70**	NA	NA	NA	NA	NA	NA	NA	**1.50**	**5.00**	NA
	Chromium	100	100	200	200	NA	NA	NA	NA	NA	NA	**70**	**28**	NA	NA	NA	NA	NA	NA	NA	**79**	**43**	NA
	Lead	200	200	600	600	NA	NA	NA	NA	NA	NA	**572**	**437**	NA	NA	NA	NA	NA	NA	NA	**700**	**1,300**	NA
	Mercury	20	20	30	30	NA	NA	NA	NA	NA	NA	**0.51**	**0.32**	NA	NA	NA	NA	NA	NA	NA	**1.10**	**1.40**	NA
	Nickel	600	600	1000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	100	100	200	200	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	**1.40**	**1.80**	NA
	Vanadium	400	400	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
ND - Not detected.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
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SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards for C9-C10 aromatics used.

Table 1. Summary of Analytical Results for Soil Samples -- 0-6' bgs
Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				NS 18,19,20		NS-22	NS 21,22,23		NS 24,25,26	
		Sample Depth (ft.):				Shallow	Deep	0-4	Shallow	Deep	Shallow	Deep
		Sample Date:				10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3							
VOCs												
(mg/kg)	1,3,5-Trimethylbenzene	100[1]	100[1]	500[1]	500[1]	NA	NA	NA	NA	NA	NA	NA
VPH												
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	20	500	20	1,000	NA	NA	NA	NA	NA	NA	NA
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA
	Xylenes	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA
EPH												
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA
SVOCs												
(mg/kg)	Acenaphthene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	600	10	600	10	NA	NA	NA	NA	NA	NA	NA
	Anthracene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	2	2	7	7	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	70	70	400	400	NA	NA	NA	NA	NA	NA	NA
	Chrysene	70	70	400	400	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	0.7	0.7	4	4	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA
	Fluorene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	80	300	80	500	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA
	Pyrene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA
PCBs												
(mg/kg)	Total PCBs	1	1	4	4	NA	NA	**2.90**	NA	NA	NA	NA
TEQ Summation												
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA
Metals, total												
(mg/kg)	Arsenic	20	20	20	20	**16**	**26**	NA	**4.0**	**10**	**16**	**15**
	Barium	1,000	1,000	3,000	3,000	**450**	**110**	NA	**110**	**310**	**430**	**560**
	Beryllium	90	90	200	200	NA	NA	NA	NA	NA	NA	NA
	Cadmium	70	70	100	100	**4.10**	**1.0**	NA	**30**	**28**	**2.50**	**2.50**
	Chromium	100	100	200	200	**160**	**28.0**	NA	**11**	**42**	**210**	**120**
	Lead	200	200	600	600	**920**	**4,900**	NA	**370**	**480**	**1,100**	**1,100**
	Mercury	20	20	30	30	**1.10**	**0.38**	NA	**0.33**	**1.20**	**1.90**	**1.60**
	Nickel	600	600	1000	1000	NA	NA	NA	NA	NA	NA	NA
	Silver	100	100	200	200	**0.68**	ND	NA	**1.50**	ND	**1.10**	**0.86**
	Vanadium	400	400	700	700	NA	NA	NA	NA	NA	NA	NA
	Zinc	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA

Notes:

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PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards for C9-C10 aromatics used.

Table 2 Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3	IW-1	IW-2	NM-ROW-1			NM-ROW-2				NM-ROW-3			
		Sample Depth (ft.):					0-0.5	0-0.5	0-1	1-3	5-7	0-1	1-3	5-7	7.5-8	0-1	1-3	5-7	8.5-10
		Sample Date:					12/23/2004	12/23/2004	3/24/2011	3/24/2011	3/24/2011 combo	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011
VOCs																			
(mg/kg)	1,3,5-Trimethylbenzene		100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																			
(mg/kg)	C9-C12 Aliphatics		1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics		100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene		500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene		20	500	20	1,000	0.088 U	0.11 U	0.19 U	0.38 U	0.22 U	0.38 U	**11**	**0.43**	0.59 U	0.43 U	0.20 U	**36**	0.77 U
	Toluene		500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes		100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																			
(mg/kg)	C9-C18 Aliphatics		1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics		3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics		1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																			
(mg/kg)	Acenaphthene		1,000	1,000	3,000	3,000	**0.11**	**0.14**	0.19 U	0.38 U	0.22 U	**0.77**	**2.6**	0.22 U	0.59 U	0.43 U	0.20 U	**8.1**	0.77 U
	Acenaphthylene		600	10	600	10	0.088 U	0.11 U	0.19 U	0.38 U	0.22 U	0.38 U	**4.4**	0.22 U	0.59 U	0.43 U	0.20 U	**1.7**	0.77 U
	Anthracene		1,000	1,000	3,000	3,000	**0.25**	**0.44**	0.19 U	**0.98**	0.22 U	**1.6**	**9.6**	**0.68**	0.59 U	**0.71**	0.20 U	**21**	0.77 U
	Benzo(a)anthracene		7	7	40	40	**0.92**	**1.4**	0.19 U	**3.1**	**0.83**	**3.9**	**15**	**1.4**	0.59 U	**2.2**	**0.45**	**20**	0.77 U
	Benzo(a)pyrene		2	2	7	7	**0.93**	**1.4**	0.19 U	**2.9**	**1.2**	**3.6**	**14**	**1.3**	0.59 U	**1.9**	**0.46**	**17**	0.77 U
	Benzo(b)fluoranthene		7	7	40	40	**1.4**	**2.3**	0.19 U	**3.5**	**1.9**	**4.6**	**17**	**1.5**	0.59 U	**2.6**	**0.56**	**20**	0.77 U
	Benzo(g,h,i)perylene		1,000	1,000	3,000	3,000	**0.49**	**0.82**	0.19 U	**1.6**	**0.58**	**1.8**	**5.2**	**0.57**	0.59 U	**0.84**	**0.40**	**6.0**	0.77 U
	Benzo(k)fluoranthene		70	70	400	400	**0.45**	**0.56**	0.19 U	**1.5**	**0.4025 J**	**1.8**	**7.0**	**0.61**	0.59 U	**1.0**	**0.25**	**7.1**	0.77 U
	Chrysene		70	70	400	400	**8.8**	**1.0**	0.19 U	**3.3**	**1**	**3.9**	**14**	**1.4**	0.59 U	**2.2**	**0.49**	**18**	0.77 U
	Dibenz(a,h)anthracene		0.7	0.7	4	4	0.088 U	0.11 U	0.19 U	0.38 U	**0.1825 J**	**0.43**	2.0 U	0.22 U	0.59 U	0.43 U	0.20 U	**1.7**	0.77 U
	Fluoranthene		1,000	1,000	3,000	3,000	**2.2**	**3.0**	**0.19**	**5.2**	**0.97**	**7.4**	**30**	**2.5**	0.59 U	**3.8**	**0.88**	**50**	0.77 U
	Fluorene		1,000	1,000	3,000	3,000	**0.089**	**0.14**	0.19 U	**0.41**	0.22 U	**0.70**	**6.1**	**0.33**	0.59 U	0.43 U	0.20 U	**13**	0.77 U
	Indeno(1,2,3-cd)pyrene		7	7	40	40	**0.55**	**0.78**	0.19 U	**1.8**	**0.84**	**2.1**	**6.5**	**0.69**	0.59 U	**0.99**	**0.41**	**7.6**	0.77 U
	2-Methylnaphthalene		80	300	80	500	0.088 U	0.11 U	0.19 U	0.38 U	0.22 U	0.38 U	**4.7**	0.22 U	0.59 U	0.43 U	0.20 U	**9.0**	0.77 U
	Phenanthrene		500	500	1,000	1,000	**1.4**	**1.9**	0.19 U	**4.3**	**0.465**	**6.6**	**41**	**2.7**	0.59 U	**3.6**	**0.43**	**77**	0.77 U
	Pyrene		1,000	1,000	3,000	3,000	**1.6**	0.11 U	0.19 U	**4.8**	**0.66**	**4.9**	**22**	**1.9**	0.59 U	**2.8**	**0.86**	**45**	0.77 U
PCBs																			
(mg/kg)	Total PCBs		1	1	4	4	**0.27**	**5.71**	**1.54 J**	**17.0 J**	**1.239 J**	**3.83 J**	**23.9 J**	**0.806 J**	0.173 UJ	**3.82 J**	**0.399 J**	**0.832 J**	**1.013 J**
TEQ Summation																			
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)		2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																			
(mg/kg)	Arsenic		20	20	20	20	**1.81**	**6.38**	2.8 U	**29**	**15.5**	**3.4**	**7.4**	**17**	8.6 U	**3.5**	2.8 U	**12**	12 U
	Barium		1,000	1,000	3,000	3,000	**19**	**584**	**40**	**710**	**450**	**440**	**780**	**380**	**190**	**440**	**63**	**730**	**130**
	Beryllium		90	90	200	200	NA	NA	0.28 U	0.28 U	0.325 U	0.28 U	0.29 U	0.32 U	0.86 U	0.31 U	0.28 U	0.34 U	1.2 U
	Cadmium		70	70	100	100	**0.81**	**3.77**	0.28 U	**3.4**	**9.4**	**1.4**	**2.1**	**2.5**	**1.1**	**1.3**	0.28 U	**1.9**	1.2 U
	Chromium		100	100	200	200	**7.14**	**57**	**9.1**	**65**	**26**	**80**	**81**	**44**	**11**	**110**	**20**	**140**	**14**
	Lead		200	200	600	600	**44**	**560**	**100**	**860**	**760**	**370**	**1,100**	**2,000**	**340**	**370**	**380**	**420**	**83**
	Mercury		20	20	30	30	**0.063**	**0.835**	**0.076**	**1.6**	**0.74**	**0.25**	**1.1**	**1.5**	**0.18**	**0.73**	**0.12**	**0.32**	0.11 U
	Nickel		600	600	1000	1000	NA	NA	**5.3**	**28**	**34.5**	**12**	**27**	**65**	**20**	**26**	**12**	**41**	**11**
	Silver		100	100	200	200	0.06 U	**0.38**	0.55 U	0.56 U	0.655 U	0.56 U	0.59 U	3.2 U	1.7 U	0.62 U	0.57 U	0.67 U	2.3 U
	Vanadium		400	400	700	700	NA	NA	**13**	**46**	**24.5**	**67**	**60**	**44**	**18**	**63**	**19**	**85**	**17**
	Zinc		1,000	1,000	3,000	3,000	NA	NA	**40**	**500**	**570**	**240**	**550**	**1,000**	**250**	**250**	**44**	**640**	**90**

Notes:

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

J - Estimated value.

NA - Sample not analyzed for the listed analyte.

ND - Not detected.

NA - Sample not analyzed for the listed analyte.

N/A - Not applicable.

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Values in Bold indicate the compound was detected.

VOCs - Volatile Organic Compounds.

VPH - Volatile Petroleum Hydrocarbons.

EPH - Extractable Petroleum Hydrocarbons.

SVOCs - Semivolatile Organic Compounds.

PCBs - Polychlorinated Biphenyls.

EMPCs - Estimated Maximum Possible Concentrations.

TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.

(1) - MCP Method 1 standards for C9-C10 aromatics used.

Table 2 Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				NM-ROW-4				SB-NM-25	SB-NM-36		SB-NM-37	SB-NM-38		TRC TP-7	TRC TP-9		NS2	
		Sample Depth (ft.):				0-1	1-3	5-7	8-10	7-8	0-1	1-3	0-1	0-1	1-3	0-3	3-5	5-7	0.5-4	4-8.5
		Sample Date:				3/24/2011	3/24/2011	3/24/2011	3/24/2011	12/17/10	6/10/2011	6/10/2011 combo	6/10/2011	7/6/2011	7/6/2011	10/28/2010	10/29/2010	10/29/2010	9/24/2004	9/24/2004
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3															
VOCs																				
(mg/kg)	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.0084**	0.0034 U	NA	NA	NA
VPH																				
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**25**	35 U	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**25**	35 U	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3.8**	0.0034 U	NA	NA	NA
	Naphthalene	20	500	20	1,000	0.18 U	0.40 U	1.8 U	0.45 U	0.21 U	0.37 U	0.465 U	0.20 U	0.39 U	0.38 U	**2.9**	**2.9**	**5.6**	NA	NA
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.5**	0.0034 U	NA	NA	NA
	Xylenes	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**20**	**0.35**	NA	NA	NA
EPH																				
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**18**	63 U	63 U	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**41**	**580**	**560**	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**460**	**840**	**780**	NA	NA
SVOCs																				
(mg/kg)	Acenaphthene	1,000	1,000	3,000	3,000	**0.37**	0.40 U	1.8 U	0.45 U	0.21 U	0.37 U	**0.355 J**	**0.22**	0.39 U	0.38 U	**6.1**	**6.3**	**8.2**	NA	NA
	Acenaphthylene	600	10	600	10	0.18 U	0.40 U	1.8 U	0.45 U	0.21 U	0.37 U	0.465 U	0.20 U	0.39 U	0.38 U	**0.51**	0.63 U	0.63 U	NA	NA
	Anthracene	1,000	1,000	3,000	3,000	**0.67**	**1.1**	**7.7**	0.45 U	0.21 U	**0.44**	**1.4**	**0.59**	0.39 U	0.38 U	**10**	**22**	**22**	NA	NA
	Benzo(a)anthracene	7	7	40	40	**2.4**	**3.6**	**12**	0.45 U	0.21 U	**1.2**	**3.4**	**1.2**	**0.59**	0.38 U	**22**	**37**	**28**	NA	NA
	Benzo(a)pyrene	2	2	7	7	**2.2**	**3.0**	**8.9**	0.45 U	0.21 U	**1.0**	**2.5**	**0.96**	**0.60**	0.38 U	**17**	**25**	**23**	NA	NA
	Benzo(b)fluoranthene	7	7	40	40	**2.8**	**3.3**	**10**	0.45 U	0.21 U	**1.3**	**3.6**	**1.3**	**0.95**	**0.40**	**25**	**36**	**30**	NA	NA
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**1.6**	**1.9**	**4.6**	0.45 U	0.21 U	**0.59**	**0.99**	**0.80**	0.39 U	0.38 U	**11**	**13**	**14**	NA	NA
	Benzo(k)fluoranthene	70	70	400	400	**1.1**	**1.2**	**4.4**	0.45 U	0.21 U	**0.49**	**1.2**	**0.46**	**0.40**	0.38 U	**9.1**	**14**	**12**	NA	NA
	Chrysene	70	70	400	400	**2.6**	**3.7**	**11**	0.45 U	0.21 U	**1.2**	**3.3**	**1.2**	**0.73**	0.38 U	**25**	**36**	**28**	NA	NA
	Dibenz(a,h)anthracene	0.7	0.7	4	4	**0.44**	**0.56**	1.8 U	0.45 U	0.21 U	0.37 U	0.465 U	**0.23**	0.39 U	0.38 U	**3.5**	**5.8**	**6.1**	NA	NA
	Fluoranthene	1,000	1,000	3,000	3,000	**2.8**	**5.2**	**25**	0.45 U	0.21 U	**2.1**	**5.7**	**2.6**	**1.3**	**0.60**	**57**	**82**	**64**	NA	NA
	Fluorene	1,000	1,000	3,000	3,000	**0.38**	**0.56**	**2.8**	0.45 U	0.21 U	0.37 U	**0.46 J**	**0.28**	0.39 U	0.38 U	**7.0**	**13**	**13**	NA	NA
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**1.7**	**2.1**	**5.7**	0.45 U	0.21 U	**0.72**	**1.25**	**0.91**	0.39 U	0.38 U	**11**	**15**	**15**	NA	NA
	2-Methylnaphthalene	80	300	80	500	0.18 U	0.40 U	1.8 U	0.45 U	0.21 U	0.37 U	0.465 U	0.20 U	0.39 U	0.38 U	**1.5**	**2.2**	**3.5**	NA	NA
	Phenanthrene	500	500	1,000	1,000	**3.7**	**5.5**	**24**	0.45 U	0.21 U	**1.8**	**5.3**	**2.5**	**0.90**	**0.61**	**54**	**82**	**74**	NA	NA
	Pyrene	1,000	1,000	3,000	3,000	**2.5**	**6.2**	**19**	0.45 U	0.21 U	**2.3**	**5.3**	**2.4**	**0.85**	0.38 U	**54**	**75**	**60**	NA	NA
PCBs																				
(mg/kg)	Total PCBs	1	1	4	4	**0.767 J**	**61.9 J**	**62.3 J**	**1.912 J**	**0.118 J**	**8.7**	**14**	**3.0**	**0.32**	**1.1**	NA	**26**	NA	ND	**2.04**
TEQ Summation																				
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																				
(mg/kg)	Arsenic	20	20	20	20	2.6 U	**6.2**	**15**	6.6 U	2.9 U	**4.8**	**12**	**3.6**	2.8 U	2.6 U	NA	NA	NA	NA	NA
	Barium	1,000	1,000	3,000	3,000	**30**	**380**	**2,000**	**69**	**37**	**680**	**1,050**	**100**	**36**	**40**	NA	NA	NA	NA	NA
	Beryllium	90	90	200	200	0.26 U	0.29 U	**0.45**	0.66 U	0.29 U	0.28 U	0.34 U	0.30 U	0.28 U	0.26 U	NA	NA	NA	NA	NA
	Cadmium	70	70	100	100	0.26 U	**1.3**	**7.1**	0.66 U	0.29 U	**1.7**	**3.1**	**0.74**	**0.31**	0.26 U	NA	NA	NA	NA	NA
	Chromium	100	100	200	200	**5.0**	**32**	**370**	**10**	**15**	**67**	**89**	**35**	**11**	**10**	NA	NA	NA	NA	NA
	Lead	200	200	600	600	**83**	**610**	**2,000**	**35**	**37**	**480**	**740**	**220**	**41**	**47**	NA	NA	NA	NA	NA
	Mercury	20	20	30	30	**0.16**	**0.73**	**1.0**	0.066 U	0.010 U	**0.82**	**1.3**	**0.38**	**0.064**	**0.13**	NA	NA	NA	NA	NA
	Nickel	600	600	1000	1000	**2.8**	**14**	**57**	**3.7**	**5.5**	**17**	**25.5**	**9.7**	**7.7**	**7.5**	NA	NA	NA	NA	NA
	Silver	100	100	200	200	0.52 U	0.58 U	0.68 U	1.3 U	0.59 U	0.56 U	0.68 U	0.59 U	0.56 U	0.52 U	NA	NA	NA	NA	NA
	Vanadium	400	400	700	700	**8.8**	**28**	**210**	**15**	**14**	**59**	**78**	**32**	**13**	**11**	NA	NA	NA	NA	NA
	Zinc	1,000	1,000	3,000	3,000	**46**	**330**	**880**	**24**	**20**	**360**	**1,550**	**320**	**46**	**41**	NA	NA	NA	NA	NA

Notes:

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(1) - MCP Method 1 standards for C9-C10 aromatics used.

Table 2 Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				NS2, 3		NS4	NS5		NS4,5		NS6	NS7	NS8	NS9	NS6,7,8,9		NS10
		Sample Depth (ft.):				Shallow	Deep	0.2-4	0.2-4	4-8.5	Shallow	Deep	0.2-4	0.3-4	0.3-4	0-4	Shallow	Deep	0.2-4
		Sample Date:				9/24/2004	9/24/2004	9/24/2004	9/24/2004	9/24/2004	9/24/2004	9/24/2004	9/28/2004	9/28/2004	9/28/2004	9/28/2004	9/28/2004	9/28/2004	9/28/2004
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3														
VOCs																			
(mg/kg)	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																			
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	20	500	20	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																			
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																			
(mg/kg)	Acenaphthene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	600	10	600	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	2	2	7	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	70	70	400	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	70	70	400	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	0.7	0.7	4	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	80	300	80	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																			
(mg/kg)	Total PCBs	1	1	4	4	NA	NA	**4.92**	ND	**2.99**	NA	NA	**2.145**	**8.74**	**3.30**	**14.16**	NA	NA	**5.38**
TEQ Summation																			
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																			
(mg/kg)	Arsenic	20	20	20	20	**63**	**35**	NA	NA	NA	**20**	**27**	NA	NA	NA	NA	**20**	**83**	NA
	Barium	1,000	1,000	3,000	3,000	**3,860**	**2,030**	NA	NA	NA	**656**	**783**	NA	NA	NA	NA	**635**	**3,680**	NA
	Beryllium	90	90	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	70	70	100	100	**7.05**	**5.55**	NA	NA	NA	**5.96**	**16**	NA	NA	NA	NA	**5.00**	**11**	NA
	Chromium	100	100	200	200	**86**	**385**	NA	NA	NA	**55**	**167**	NA	NA	NA	NA	**67**	**244**	NA
	Lead	200	200	600	600	**1,550**	**3,900**	NA	NA	NA	**3,260**	**903**	NA	NA	NA	NA	**658**	**1,260**	NA
	Mercury	20	20	30	30	**0.677**	**0.416**	NA	NA	NA	**1.03**	**0.531**	NA	NA	NA	NA	**0.64**	**1.03**	NA
	Nickel	600	600	1000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	100	100	200	200	**0.67**	**0.75**	NA	NA	NA	**0.68**	**1.34**	NA	NA	NA	NA	**4.16**	ND	NA
	Vanadium	400	400	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				NS11			NS12		Comp NS10,11,12		NS13		NS15	
		Sample Depth (ft.):				0-4	4-9	4-9	0-4	4-9	Shallow	Deep	0-4	4-9	0-4	4-8.25
		Sample Date:				9/28/2004	9/29/2004	9/29/2004	9/29/2004	9/29/2004	9/29/2004	9/29/2004	9/29/2004	9/29/2004	10/1/2004	10/1/2004
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3			Field Dup								
VOCs																
(mg/kg)	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	20	500	20	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																
(mg/kg)	Acenaphthene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	600	10	600	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	2	2	7	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	70	70	400	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	70	70	400	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	0.7	0.7	4	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	80	300	80	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																
(mg/kg)	Total PCBs	1	1	4	4	**3.00**	**2.10**	**1.86**	**61**	**3.50**	NA	NA	**9.60**	**7.35**	ND	**17.3**
TEQ Summation																
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																
(mg/kg)	Arsenic	20	20	20	20	NA	NA	NA	NA	NA	**19**	**11**	NA	NA	NA	NA
	Barium	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	**602**	**289**	NA	NA	NA	NA
	Beryllium	90	90	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	70	70	100	100	NA	NA	NA	NA	NA	**4.12**	**4.70**	NA	NA	NA	NA
	Chromium	100	100	200	200	NA	NA	NA	NA	NA	**70**	**28**	NA	NA	NA	NA
	Lead	200	200	600	600	NA	NA	NA	NA	NA	**572**	**437**	NA	NA	NA	NA
	Mercury	20	20	30	30	NA	NA	NA	NA	NA	**0.51**	**0.32**	NA	NA	NA	NA
	Nickel	600	600	1000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	100	100	200	200	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA
	Vanadium	400	400	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	1,000	1,000	3,000	3,000	NA	NA	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.
NA - Sample not analyzed for the listed analyte.
ND - Not detected.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
UA - Unknown.
R - Rejected data point due to matrix spike recoveries <10%.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards for C9-C10 aromatics used.

Table 2 Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				NS16		NS17	NS15,16,17		NS18	NS 18,19,20		NS-22	NS 21,22,23		NS 24,25,26	
		Sample Depth (ft.):				0-4	4-8	0-4	Shallow	Deep	1-4	Shallow	Deep	0-4	Shallow	Deep	Shallow	Deep
		Sample Date:				10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3													
VOCs																		
(mg/kg)	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																		
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	20	500	20	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																		
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																		
(mg/kg)	Acenaphthene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	600	10	600	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	2	2	7	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	70	70	400	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	70	70	400	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	0.7	0.7	4	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	80	300	80	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																		
(mg/kg)	Total PCBs	1	1	4	4	ND	**8.25**	**12.20**	NA	NA	**16.10**	NA	NA	**2.90**	NA	NA	NA	NA
TEQ Summation																		
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																		
(mg/kg)	Arsenic	20	20	20	20	NA	NA	NA	**10**	**18**	NA	**16**	**26**	NA	**4.0**	**10**	**16**	**15**
	Barium	1,000	1,000	3,000	3,000	NA	NA	NA	**320**	**160**	NA	**450**	**110**	NA	**110**	**310**	**430**	**560**
	Beryllium	90	90	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	70	70	100	100	NA	NA	NA	**1.50**	**5.00**	NA	**4.10**	**1.0**	NA	**30**	**28**	**2.50**	**2.50**
	Chromium	100	100	200	200	NA	NA	NA	**79**	**43**	NA	**160**	**28.0**	NA	**11**	**42**	**210**	**120**
	Lead	200	200	600	600	NA	NA	NA	**700**	**1,300**	NA	**920**	**4,900**	NA	**370**	**480**	**1,100**	**1,100**
	Mercury	20	20	30	30	NA	NA	NA	**1.10**	**1.40**	NA	**1.10**	**0.38**	NA	**0.33**	**1.20**	**1.90**	**1.60**
	Nickel	600	600	1000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	100	100	200	200	NA	NA	NA	**1.40**	**1.80**	NA	**0.68**	ND	NA	**1.50**	ND	**1.10**	**0.86**
	Vanadium	400	400	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	1,000	1,000	3,000	3,000	NA	NA	NA	NA	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.

NA - Sample not analyzed for the listed analyte.

ND - Not detected.

NA - Sample not analyzed for the listed analyte.

N/A - Not applicable.

UA - Unknown.

R - Rejected data point due to matrix spike recoveries <10%.

Values in Bold indicate the compound was detected.

VOCs - Volatile Organic Compounds.

VPH - Volatile Petroleum Hydrocarbons.

EPH - Extractable Petroleum Hydrocarbons.

SVOCs - Semivolatile Organic Compounds.

PCBs - Polychlorinated Biphenyls.

EMPCs - Estimated Maximum Possible Concentrations.

TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.

(1) - MCP Method 1 standards for C9-C10 aromatics used.

ATTACHMENT 2

PROUCL OUTPUTS

1	**UCL Statistics for Uncensored Full Data Sets**											
2												
3			User Selected Options									
4			Date/Time of Computation	10/2/2015 1:42:34 PM								
5			From File	ProUCL_Import.xls								
6			Full Precision	OFF								
7			Confidence Coefficient	95%								
8			Number of Bootstrap Operations	2000								
9												
10												
11	**Benzo(a)anthracene_Tab2_0-15**											
12												
13	**General Statistics**											
14					Total Number of Observations	139			Number of Distinct Observations	100		
15									Number of Missing Observations	53		
16					Minimum	0.095			Mean	10.3		
17					Maximum	220			Median	2.6		
18					SD	26.02			Std. Error of Mean	2.207		
19					Coefficient of Variation	2.526			Skewness	5.41		
20												
21	**Normal GOF Test**											
22					Shapiro Wilk Test Statistic	0.413			**Shapiro Wilk GOF Test**			
23					5% Shapiro Wilk P Value	0			Data Not Normal at 5% Significance Level			
24					Lilliefors Test Statistic	0.347			**Lilliefors GOF Test**			
25					5% Lilliefors Critical Value	0.0751			Data Not Normal at 5% Significance Level			
26	**Data Not Normal at 5% Significance Level**											
27												
28	**Assuming Normal Distribution**											
29					**95% Normal UCL**				**95% UCLs (Adjusted for Skewness)**			
30					95% Student's-t UCL	13.96			95% Adjusted-CLT UCL (Chen-1995)	15.02		
31									95% Modified-t UCL (Johnson-1978)	14.13		
32												
33	**Gamma GOF Test**											
34					A-D Test Statistic	5.693			**Anderson-Darling Gamma GOF Test**			
35					5% A-D Critical Value	0.823			Data Not Gamma Distributed at 5% Significance Level			
36					K-S Test Statistic	0.174			**Kolmogrov-Smirnoff Gamma GOF Test**			
37					5% K-S Critical Value	0.0842			Data Not Gamma Distributed at 5% Significance Level			
38	**Data Not Gamma Distributed at 5% Significance Level**											
39												
40	**Gamma Statistics**											
41					k hat (MLE)	0.483			k star (bias corrected MLE)	0.478		
42					Theta hat (MLE)	21.32			Theta star (bias corrected MLE)	21.57		
43					nu hat (MLE)	134.4			nu star (bias corrected)	132.8		
44					MLE Mean (bias corrected)	10.3			MLE Sd (bias corrected)	14.91		
45									Approximate Chi Square Value (0.05)	107.2		
46					Adjusted Level of Significance	0.0483			Adjusted Chi Square Value	106.9		
47												
48	**Assuming Gamma Distribution**											

49	95% Approximate Gamma UCL (use when n>=50))					12.77	95% Adjusted Gamma UCL (use when n<50)					12.8
50												
51	**Lognormal GOF Test**											
52	Shapiro Wilk Test Statistic					0.976	**Shapiro Wilk Lognormal GOF Test**					
53	5% Shapiro Wilk P Value					0.248	Data appear Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic					0.0477	**Lilliefors Lognormal GOF Test**					
55	5% Lilliefors Critical Value					0.0751	Data appear Lognormal at 5% Significance Level					
56	**Data appear Lognormal at 5% Significance Level**											
57												
58	**Lognormal Statistics**											
59	Minimum of Logged Data					-2.354	Mean of logged Data					1.011
60	Maximum of Logged Data					5.394	SD of logged Data					1.61
61												
62	**Assuming Lognormal Distribution**											
63	95% H-UCL					14.79	90% Chebyshev (MVUE) UCL					15.68
64	95% Chebyshev (MVUE) UCL					18.33	97.5% Chebyshev (MVUE) UCL					22.01
65	99% Chebyshev (MVUE) UCL					29.23						
66												
67	**Nonparametric Distribution Free UCL Statistics**											
68	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
69												
70	**Nonparametric Distribution Free UCLs**											
71	95% CLT UCL					13.93	95% Jackknife UCL					13.96
72	95% Standard Bootstrap UCL					13.86	95% Bootstrap-t UCL					16.21
73	95% Hall's Bootstrap UCL					16.24	95% Percentile Bootstrap UCL					14.44
74	95% BCA Bootstrap UCL					15.21						
75	90% Chebyshev(Mean, Sd) UCL					16.93	95% Chebyshev(Mean, Sd) UCL					19.93
76	97.5% Chebyshev(Mean, Sd) UCL					24.09	99% Chebyshev(Mean, Sd) UCL					32.27
77												
78	**Suggested UCL to Use**											
79	95% H-UCL					14.79						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
83	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
84	For additional insight the user may want to consult a statistician.											
85												
86	**ProUCL computes and outputs H-statistic based UCLs for historical reasons only.**											
87	**H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.**											
88	**It is therefore recommended to avoid the use of H-statistic based 95% UCLs.**											
89	**Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.**											
90												
91												
92	**Benzo(a)pyrene_Tab2_0-15**											
93												
94	**General Statistics**											
95	Total Number of Observations					139	Number of Distinct Observations					94
96							Number of Missing Observations					53

	A	B	C	D	E	F	G	H	I	J	K	L
97					Minimum	0.095					Mean	8.838
98					Maximum	210					Median	2.45
99					SD	22.76					Std. Error of Mean	1.93
100					Coefficient of Variation	2.575					Skewness	6.17
101												
102	**Normal GOF Test**											
103					Shapiro Wilk Test Statistic	0.396	**Shapiro Wilk GOF Test**					
104					5% Shapiro Wilk P Value	0	Data Not Normal at 5% Significance Level					
105					Lilliefors Test Statistic	0.35	**Lilliefors GOF Test**					
106					5% Lilliefors Critical Value	0.0751	Data Not Normal at 5% Significance Level					
107	**Data Not Normal at 5% Significance Level**											
108												
109	**Assuming Normal Distribution**											
110	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
111					95% Student's-t UCL	12.03					95% Adjusted-CLT UCL (Chen-1995)	13.09
112											95% Modified-t UCL (Johnson-1978)	12.2
113												
114	**Gamma GOF Test**											
115					A-D Test Statistic	5.741	**Anderson-Darling Gamma GOF Test**					
116					5% A-D Critical Value	0.818	Data Not Gamma Distributed at 5% Significance Level					
117					K-S Test Statistic	0.18	**Kolmogrov-Smirnoff Gamma GOF Test**					
118					5% K-S Critical Value	0.0839	Data Not Gamma Distributed at 5% Significance Level					
119	**Data Not Gamma Distributed at 5% Significance Level**											
120												
121	**Gamma Statistics**											
122					k hat (MLE)	0.514					k star (bias corrected MLE)	0.507
123					Theta hat (MLE)	17.2					Theta star (bias corrected MLE)	17.42
124					nu hat (MLE)	142.8					nu star (bias corrected)	141.1
125					MLE Mean (bias corrected)	8.838					MLE Sd (bias corrected)	12.41
126											Approximate Chi Square Value (0.05)	114.6
127					Adjusted Level of Significance	0.0483					Adjusted Chi Square Value	114.4
128												
129	**Assuming Gamma Distribution**											
130					95% Approximate Gamma UCL (use when n>=50))	10.88					95% Adjusted Gamma UCL (use when n<50)	10.9
131												
132	**Lognormal GOF Test**											
133					Shapiro Wilk Test Statistic	0.979	**Shapiro Wilk Lognormal GOF Test**					
134					5% Shapiro Wilk P Value	0.377	Data appear Lognormal at 5% Significance Level					
135					Lilliefors Test Statistic	0.0572	**Lilliefors Lognormal GOF Test**					
136					5% Lilliefors Critical Value	0.0751	Data appear Lognormal at 5% Significance Level					
137	**Data appear Lognormal at 5% Significance Level**											
138												
139	**Lognormal Statistics**											
140					Minimum of Logged Data	-2.354					Mean of logged Data	0.948
141					Maximum of Logged Data	5.347					SD of logged Data	1.531
142												
143	**Assuming Lognormal Distribution**											
144					95% H-UCL	11.91					90% Chebyshev (MVUE) UCL	12.71

145				95% Chebyshev (MVUE) UCL		14.76				97.5% Chebyshev (MVUE) UCL		17.6
146				99% Chebyshev (MVUE) UCL		23.19						
147												
148						**Nonparametric Distribution Free UCL Statistics**							
149						**Data appear to follow a Discernible Distribution at 5% Significance Level**							
150												
151						**Nonparametric Distribution Free UCLs**							
152				95% CLT UCL		12.01				95% Jackknife UCL		12.03
153				95% Standard Bootstrap UCL		12.03				95% Bootstrap-t UCL		14.71
154				95% Hall's Bootstrap UCL		16.43				95% Percentile Bootstrap UCL		12.3
155				95% BCA Bootstrap UCL		13.26						
156				90% Chebyshev(Mean, Sd) UCL		14.63				95% Chebyshev(Mean, Sd) UCL		17.25
157				97.5% Chebyshev(Mean, Sd) UCL		20.89				99% Chebyshev(Mean, Sd) UCL		28.04
158												
159						**Suggested UCL to Use**							
160				95% H-UCL		11.91						
161												
162	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
163	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
164	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
165	For additional insight the user may want to consult a statistician.											
166												
167	**ProUCL computes and outputs H-statistic based UCLs for historical reasons only.**											
168	**H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.**											
169	**It is therefore recommended to avoid the use of H-statistic based 95% UCLs.**											
170	**Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.**											
171												
172												
173	**Benzo(b)fluoranthene_Tab2_0-15**											
174												
175						**General Statistics**							
176				Total Number of Observations		139				Number of Distinct Observations		100
177										Number of Missing Observations		53
178				Minimum		0.095				Mean		10.72
179				Maximum		190				Median		3.3
180				SD		24.39				Std. Error of Mean		2.069
181				Coefficient of Variation		2.276				Skewness		4.826
182												
183						**Normal GOF Test**							
184				Shapiro Wilk Test Statistic		0.446				**Shapiro Wilk GOF Test**		
185				5% Shapiro Wilk P Value		0				Data Not Normal at 5% Significance Level		
186				Lilliefors Test Statistic		0.332				**Lilliefors GOF Test**		
187				5% Lilliefors Critical Value		0.0751				Data Not Normal at 5% Significance Level		
188						**Data Not Normal at 5% Significance Level**							
189												
190						**Assuming Normal Distribution**							
191				**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**		
192				95% Student's-t UCL		14.14				95% Adjusted-CLT UCL (Chen-1995)		15.03

193											95% Modified-t UCL (Johnson-1978)	14.29
194												
195	**Gamma GOF Test**											
196					A-D Test Statistic	4.862	**Anderson-Darling Gamma GOF Test**					
197					5% A-D Critical Value	0.816	Data Not Gamma Distributed at 5% Significance Level					
198					K-S Test Statistic	0.163	**Kolmogrov-Smirnoff Gamma GOF Test**					
199					5% K-S Critical Value	0.0838	Data Not Gamma Distributed at 5% Significance Level					
200	**Data Not Gamma Distributed at 5% Significance Level**											
201												
202	**Gamma Statistics**											
203					k hat (MLE)	0.532					k star (bias corrected MLE)	0.525
204					Theta hat (MLE)	20.15					Theta star (bias corrected MLE)	20.4
205					nu hat (MLE)	147.9					nu star (bias corrected)	146
206					MLE Mean (bias corrected)	10.72					MLE Sd (bias corrected)	14.79
207											Approximate Chi Square Value (0.05)	119.1
208					Adjusted Level of Significance	0.0483					Adjusted Chi Square Value	118.9
209												
210	**Assuming Gamma Distribution**											
211					95% Approximate Gamma UCL (use when n>=50))	13.14					95% Adjusted Gamma UCL (use when n<50)	13.17
212												
213	**Lognormal GOF Test**											
214					Shapiro Wilk Test Statistic	0.978	**Shapiro Wilk Lognormal GOF Test**					
215					5% Shapiro Wilk P Value	0.3	Data appear Lognormal at 5% Significance Level					
216					Lilliefors Test Statistic	0.0526	**Lilliefors Lognormal GOF Test**					
217					5% Lilliefors Critical Value	0.0751	Data appear Lognormal at 5% Significance Level					
218	**Data appear Lognormal at 5% Significance Level**											
219												
220	**Lognormal Statistics**											
221					Minimum of Logged Data	-2.354					Mean of logged Data	1.189
222					Maximum of Logged Data	5.247					SD of logged Data	1.549
223												
224	**Assuming Lognormal Distribution**											
225					95% H-UCL	15.68					90% Chebyshev (MVUE) UCL	16.72
226					95% Chebyshev (MVUE) UCL	19.44					97.5% Chebyshev (MVUE) UCL	23.22
227					99% Chebyshev (MVUE) UCL	30.65						
228												
229	**Nonparametric Distribution Free UCL Statistics**											
230	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
231												
232	**Nonparametric Distribution Free UCLs**											
233					95% CLT UCL	14.12					95% Jackknife UCL	14.14
234					95% Standard Bootstrap UCL	14.18					95% Bootstrap-t UCL	15.58
235					95% Hall's Bootstrap UCL	15.7					95% Percentile Bootstrap UCL	14.38
236					95% BCA Bootstrap UCL	15.23						
237					90% Chebyshev(Mean, Sd) UCL	16.92					95% Chebyshev(Mean, Sd) UCL	19.74
238					97.5% Chebyshev(Mean, Sd) UCL	23.64					99% Chebyshev(Mean, Sd) UCL	31.3
239												
240	**Suggested UCL to Use**											

241					95% H-UCL	15.68						
242												
243	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
244	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
245	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
246	For additional insight the user may want to consult a statistician.											
247												
248	**ProUCL computes and outputs H-statistic based UCLs for historical reasons only.**											
249	**H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.**											
250	**It is therefore recommended to avoid the use of H-statistic based 95% UCLs.**											
251	**Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.**											
252												
253												
254	**Dibenz(a,h)anthracene_Tab2_0-15**											
255												
256	**General Statistics**											
257					Total Number of Observations	137			Number of Distinct Observations	94		
258									Number of Missing Observations	55		
259					Minimum	0.044			Mean	1.115		
260					Maximum	15			Median	0.44		
261					SD	2.313			Std. Error of Mean	0.198		
262					Coefficient of Variation	2.074			Skewness	4.568		
263												
264	**Normal GOF Test**											
265					Shapiro Wilk Test Statistic	0.443			**Shapiro Wilk GOF Test**			
266					5% Shapiro Wilk P Value	0			Data Not Normal at 5% Significance Level			
267					Lilliefors Test Statistic	0.322			**Lilliefors GOF Test**			
268					5% Lilliefors Critical Value	0.0757			Data Not Normal at 5% Significance Level			
269	**Data Not Normal at 5% Significance Level**											
270												
271	**Assuming Normal Distribution**											
272					**95% Normal UCL**				**95% UCLs (Adjusted for Skewness)**			
273					95% Student's-t UCL	1.442			95% Adjusted-CLT UCL (Chen-1995)	1.522		
274									95% Modified-t UCL (Johnson-1978)	1.455		
275												
276	**Gamma GOF Test**											
277					A-D Test Statistic	7.381			**Anderson-Darling Gamma GOF Test**			
278					5% A-D Critical Value	0.8			Data Not Gamma Distributed at 5% Significance Level			
279					K-S Test Statistic	0.169			**Kolmogrov-Smirnoff Gamma GOF Test**			
280					5% K-S Critical Value	0.0833			Data Not Gamma Distributed at 5% Significance Level			
281	**Data Not Gamma Distributed at 5% Significance Level**											
282												
283	**Gamma Statistics**											
284					k hat (MLE)	0.706			k star (bias corrected MLE)	0.695		
285					Theta hat (MLE)	1.58			Theta star (bias corrected MLE)	1.604		
286					nu hat (MLE)	193.4			nu star (bias corrected)	190.5		
287					MLE Mean (bias corrected)	1.115			MLE Sd (bias corrected)	1.337		
288									Approximate Chi Square Value (0.05)	159.6		

289	Adjusted Level of Significance					0.0482	Adjusted Chi Square Value					159.3
290												
291	**Assuming Gamma Distribution**											
292	95% Approximate Gamma UCL (use when n>=50))					1.331	95% Adjusted Gamma UCL (use when n<50)					1.334
293												
294	**Lognormal GOF Test**											
295	Shapiro Wilk Test Statistic					0.95	**Shapiro Wilk Lognormal GOF Test**					
296	5% Shapiro Wilk P Value					1.7393E-4	Data Not Lognormal at 5% Significance Level					
297	Lilliefors Test Statistic					0.0782	**Lilliefors Lognormal GOF Test**					
298	5% Lilliefors Critical Value					0.0757	Data Not Lognormal at 5% Significance Level					
299	**Data Not Lognormal at 5% Significance Level**											
300												
301	**Lognormal Statistics**											
302	Minimum of Logged Data					-3.124	Mean of logged Data					-0.746
303	Maximum of Logged Data					2.708	SD of logged Data					1.173
304												
305	**Assuming Lognormal Distribution**											
306	95% H-UCL					1.196	90% Chebyshev (MVUE) UCL					1.293
307	95% Chebyshev (MVUE) UCL					1.455	97.5% Chebyshev (MVUE) UCL					1.679
308	99% Chebyshev (MVUE) UCL					2.12						
309												
310	**Nonparametric Distribution Free UCL Statistics**											
311	**Data do not follow a Discernible Distribution (0.05)**											
312												
313	**Nonparametric Distribution Free UCLs**											
314	95% CLT UCL					1.44	95% Jackknife UCL					1.442
315	95% Standard Bootstrap UCL					1.44	95% Bootstrap-t UCL					1.617
316	95% Hall's Bootstrap UCL					1.548	95% Percentile Bootstrap UCL					1.452
317	95% BCA Bootstrap UCL					1.531						
318	90% Chebyshev(Mean, Sd) UCL					1.708	95% Chebyshev(Mean, Sd) UCL					1.976
319	97.5% Chebyshev(Mean, Sd) UCL					2.349	99% Chebyshev(Mean, Sd) UCL					3.081
320												
321	**Suggested UCL to Use**											
322	95% Chebyshev (Mean, Sd) UCL					1.976						
323												
324	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
325	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
326	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
327	For additional insight the user may want to consult a statistician.											
328												
329												
330	**Indeno(1,2,3-cd)pyrene_Tab2_0-15**											
331												
332	**General Statistics**											
333	Total Number of Observations					138	Number of Distinct Observations					96
334							Number of Missing Observations					54
335	Minimum					0.095	Mean					5.186
336	Maximum					140	Median					1.55

	A	B	C	D	E	F	G	H	I	J	K	L
337					SD	13.94				Std. Error of Mean		1.187
338					Coefficient of Variation	2.688				Skewness		7.33
339												
340	**Normal GOF Test**											
341					Shapiro Wilk Test Statistic	0.366	**Shapiro Wilk GOF Test**					
342					5% Shapiro Wilk P Value	0	Data Not Normal at 5% Significance Level					
343					Lilliefors Test Statistic	0.357	**Lilliefors GOF Test**					
344					5% Lilliefors Critical Value	0.0754	Data Not Normal at 5% Significance Level					
345	**Data Not Normal at 5% Significance Level**											
346												
347	**Assuming Normal Distribution**											
348	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
349					95% Student's-t UCL	7.151				95% Adjusted-CLT UCL (Chen-1995)		7.928
350										95% Modified-t UCL (Johnson-1978)		7.274
351												
352	**Gamma GOF Test**											
353					A-D Test Statistic	5.66	**Anderson-Darling Gamma GOF Test**					
354					5% A-D Critical Value	0.815	Data Not Gamma Distributed at 5% Significance Level					
355					K-S Test Statistic	0.164	**Kolmogrov-Smirnoff Gamma GOF Test**					
356					5% K-S Critical Value	0.084	Data Not Gamma Distributed at 5% Significance Level					
357	**Data Not Gamma Distributed at 5% Significance Level**											
358												
359	**Gamma Statistics**											
360					k hat (MLE)	0.55				k star (bias corrected MLE)		0.542
361					Theta hat (MLE)	9.436				Theta star (bias corrected MLE)		9.56
362					nu hat (MLE)	151.7				nu star (bias corrected)		149.7
363					MLE Mean (bias corrected)	5.186				MLE Sd (bias corrected)		7.041
364										Approximate Chi Square Value (0.05)		122.4
365					Adjusted Level of Significance	0.0483				Adjusted Chi Square Value		122.2
366												
367	**Assuming Gamma Distribution**											
368					95% Approximate Gamma UCL (use when n>=50))	6.341				95% Adjusted Gamma UCL (use when n<50)		6.355
369												
370	**Lognormal GOF Test**											
371					Shapiro Wilk Test Statistic	0.978	**Shapiro Wilk Lognormal GOF Test**					
372					5% Shapiro Wilk P Value	0.311	Data appear Lognormal at 5% Significance Level					
373					Lilliefors Test Statistic	0.0438	**Lilliefors Lognormal GOF Test**					
374					5% Lilliefors Critical Value	0.0754	Data appear Lognormal at 5% Significance Level					
375	**Data appear Lognormal at 5% Significance Level**											
376												
377	**Lognormal Statistics**											
378					Minimum of Logged Data	-2.354				Mean of logged Data		0.507
379					Maximum of Logged Data	4.942				SD of logged Data		1.439
380												
381	**Assuming Lognormal Distribution**											
382					95% H-UCL	6.459				90% Chebyshev (MVUE) UCL		6.937
383					95% Chebyshev (MVUE) UCL	7.993				97.5% Chebyshev (MVUE) UCL		9.46
384					99% Chebyshev (MVUE) UCL	12.34						

385												
386	**Nonparametric Distribution Free UCL Statistics**											
387	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
388												
389	**Nonparametric Distribution Free UCLs**											
390					95% CLT UCL	7.137				95% Jackknife UCL	7.151	
391					95% Standard Bootstrap UCL	7.154				95% Bootstrap-t UCL	9.033	
392					95% Hall's Bootstrap UCL	14.7				95% Percentile Bootstrap UCL	7.262	
393					95% BCA Bootstrap UCL	8.267						
394					90% Chebyshev(Mean, Sd) UCL	8.745				95% Chebyshev(Mean, Sd) UCL	10.36	
395					97.5% Chebyshev(Mean, Sd) UCL	12.6				99% Chebyshev(Mean, Sd) UCL	16.99	
396												
397	**Suggested UCL to Use**											
398					95% H-UCL	6.459						
399												
400	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
401	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
402	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
403	For additional insight the user may want to consult a statistician.											
404												
405	**ProUCL computes and outputs H-statistic based UCLs for historical reasons only.**											
406	**H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.**											
407	**It is therefore recommended to avoid the use of H-statistic based 95% UCLs.**											
408	**Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.**											
409												
410												
411	**Total PCBs_Tab2_0-15**											
412												
413	**General Statistics**											
414					Total Number of Observations	177				Number of Distinct Observations	171	
415										Number of Missing Observations	15	
416					Minimum	0.0293				Mean	14.64	
417					Maximum	92.9				Median	7.61	
418					SD	17.44				Std. Error of Mean	1.311	
419					Coefficient of Variation	1.192				Skewness	1.696	
420												
421	**Normal GOF Test**											
422					Shapiro Wilk Test Statistic	0.785				**Shapiro Wilk GOF Test**		
423					5% Shapiro Wilk P Value	0				Data Not Normal at 5% Significance Level		
424					Lilliefors Test Statistic	0.201				**Lilliefors GOF Test**		
425					5% Lilliefors Critical Value	0.0666				Data Not Normal at 5% Significance Level		
426	**Data Not Normal at 5% Significance Level**											
427												
428	**Assuming Normal Distribution**											
429					**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**		
430					95% Student's-t UCL	16.81				95% Adjusted-CLT UCL (Chen-1995)	16.97	
431										95% Modified-t UCL (Johnson-1978)	16.83	
432												

	A	B	C	D	E	F	G	H	I	J	K	L
433	**Gamma GOF Test**											
434	A-D Test Statistic					0.401	**Anderson-Darling Gamma GOF Test**					
435	5% A-D Critical Value					0.808	Detected data appear Gamma Distributed at 5% Significance Level					
436	K-S Test Statistic					0.0513	**Kolmogrov-Smirnoff Gamma GOF Test**					
437	5% K-S Critical Value					0.073	Detected data appear Gamma Distributed at 5% Significance Level					
438	**Detected data appear Gamma Distributed at 5% Significance Level**											
439												
440	**Gamma Statistics**											
441	k hat (MLE)					0.625	k star (bias corrected MLE)					0.618
442	Theta hat (MLE)					23.43	Theta star (bias corrected MLE)					23.68
443	nu hat (MLE)					221.2	nu star (bias corrected)					218.8
444	MLE Mean (bias corrected)					14.64	MLE Sd (bias corrected)					18.62
445							Approximate Chi Square Value (0.05)					185.6
446	Adjusted Level of Significance					0.0486	Adjusted Chi Square Value					185.3
447												
448	**Assuming Gamma Distribution**											
449	95% Approximate Gamma UCL (use when n>=50)					17.26	95% Adjusted Gamma UCL (use when n<50)					17.28
450												
451	**Lognormal GOF Test**											
452	Shapiro Wilk Test Statistic					0.93	**Shapiro Wilk Lognormal GOF Test**					
453	5% Shapiro Wilk P Value					1.168E-10	Data Not Lognormal at 5% Significance Level					
454	Lilliefors Test Statistic					0.0887	**Lilliefors Lognormal GOF Test**					
455	5% Lilliefors Critical Value					0.0666	Data Not Lognormal at 5% Significance Level					
456	**Data Not Lognormal at 5% Significance Level**											
457												
458	**Lognormal Statistics**											
459	Minimum of Logged Data					-3.53	Mean of logged Data					1.701
460	Maximum of Logged Data					4.532	SD of logged Data					1.753
461												
462	**Assuming Lognormal Distribution**											
463	95% H-UCL					37.44	90% Chebyshev (MVUE) UCL					39.95
464	95% Chebyshev (MVUE) UCL					46.76	97.5% Chebyshev (MVUE) UCL					56.21
465	99% Chebyshev (MVUE) UCL					74.79						
466												
467	**Nonparametric Distribution Free UCL Statistics**											
468	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
469												
470	**Nonparametric Distribution Free UCLs**											
471	95% CLT UCL					16.79	95% Jackknife UCL					16.81
472	95% Standard Bootstrap UCL					16.82	95% Bootstrap-t UCL					17.08
473	95% Hall's Bootstrap UCL					16.87	95% Percentile Bootstrap UCL					16.93
474	95% BCA Bootstrap UCL					16.91						
475	90% Chebyshev(Mean, Sd) UCL					18.57	95% Chebyshev(Mean, Sd) UCL					20.35
476	97.5% Chebyshev(Mean, Sd) UCL					22.83	99% Chebyshev(Mean, Sd) UCL					27.68
477												
478	**Suggested UCL to Use**											
479	95% Approximate Gamma UCL					17.26						
480												

481	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
482	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
483	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
484	For additional insight the user may want to consult a statistician.											
485												
486												
487	**TEQs (ND=DL/2; EMPC=EMPC)_Tab2_0-15**											
488												
489	**General Statistics**											
490						Total Number of Observations	16				Number of Distinct Observations	16	
491											Number of Missing Observations	137
492						Minimum	6.4261E-5				Mean	3.3398E-4
493						Maximum	7.4287E-4				Median	3.6571E-4
494						SD	1.9391E-4				Std. Error of Mean	4.8478E-5
495						Coefficient of Variation	0.581				Skewness	0.323
496												
497	**Normal GOF Test**											
498						Shapiro Wilk Test Statistic	0.955				**Shapiro Wilk GOF Test**	
499						5% Shapiro Wilk Critical Value	0.887				Data appear Normal at 5% Significance Level	
500						Lilliefors Test Statistic	0.121				**Lilliefors GOF Test**	
501						5% Lilliefors Critical Value	0.222				Data appear Normal at 5% Significance Level	
502	**Data appear Normal at 5% Significance Level**											
503												
504	**Assuming Normal Distribution**											
505						**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**	
506						95% Student's-t UCL	4.1897E-4				95% Adjusted-CLT UCL (Chen-1995)	4.1791E-4
507											95% Modified-t UCL (Johnson-1978)	4.1962E-4
508												
509	**Gamma GOF Test**											
510						A-D Test Statistic	0.429				**Anderson-Darling Gamma GOF Test**	
511						5% A-D Critical Value	0.747				Detected data appear Gamma Distributed at 5% Significance Level	
512						K-S Test Statistic	0.183				**Kolmogrov-Smirnoff Gamma GOF Test**	
513						5% K-S Critical Value	0.217				Detected data appear Gamma Distributed at 5% Significance Level	
514	**Detected data appear Gamma Distributed at 5% Significance Level**											
515												
516	**Gamma Statistics**											
517						k hat (MLE)	2.517				k star (bias corrected MLE)	2.087
518						Theta hat (MLE)	1.3267E-4				Theta star (bias corrected MLE)	1.6003E-4
519						nu hat (MLE)	80.56				nu star (bias corrected)	66.79
520						MLE Mean (bias corrected)	3.3398E-4				MLE Sd (bias corrected)	2.3119E-4
521											Approximate Chi Square Value (0.05)	48.98
522						Adjusted Level of Significance	0.0335				Adjusted Chi Square Value	47.24
523												
524	**Assuming Gamma Distribution**											
525						95% Approximate Gamma UCL (use when n>=50))	4.5541E-4				95% Adjusted Gamma UCL (use when n<50)	4.7212E-4
526												
527	**Lognormal GOF Test**											
528						Shapiro Wilk Test Statistic	0.915				**Shapiro Wilk Lognormal GOF Test**	

529	5% Shapiro Wilk Critical Value					0.887	Data appear Lognormal at 5% Significance Level					
530	Lilliefors Test Statistic					0.195	**Lilliefors Lognormal GOF Test**					
531	5% Lilliefors Critical Value					0.222	Data appear Lognormal at 5% Significance Level					
532	**Data appear Lognormal at 5% Significance Level**											
533												
534	**Lognormal Statistics**											
535	Minimum of Logged Data					-9.653	Mean of logged Data					-8.216
536	Maximum of Logged Data					-7.205	SD of logged Data					0.738
537												
538	**Assuming Lognormal Distribution**											
539	95% H-UCL					5.5270E-4	90% Chebyshev (MVUE) UCL					5.5170E-4
540	95% Chebyshev (MVUE) UCL					6.4419E-4	97.5% Chebyshev (MVUE) UCL					7.7256E-4
541	99% Chebyshev (MVUE) UCL					0.00102						
542												
543	**Nonparametric Distribution Free UCL Statistics**											
544	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
545												
546	**Nonparametric Distribution Free UCLs**											
547	95% CLT UCL					4.1372E-4	95% Jackknife UCL					4.1897E-4
548	95% Standard Bootstrap UCL					4.1125E-4	95% Bootstrap-t UCL					4.1998E-4
549	95% Hall's Bootstrap UCL					4.2158E-4	95% Percentile Bootstrap UCL					4.1390E-4
550	95% BCA Bootstrap UCL					4.1123E-4						
551	90% Chebyshev(Mean, Sd) UCL					4.7942E-4	95% Chebyshev(Mean, Sd) UCL					5.4529E-4
552	97.5% Chebyshev(Mean, Sd) UCL					6.3673E-4	99% Chebyshev(Mean, Sd) UCL					8.1633E-4
553												
554	**Suggested UCL to Use**											
555	95% Student's-t UCL					4.1897E-4						
556												
557	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
558	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
559	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
560	For additional insight the user may want to consult a statistician.											
561												
562												
563	**Barium_Tab2_0-15**											
564												
565	**General Statistics**											
566	Total Number of Observations					131	Number of Distinct Observations					96
567							Number of Missing Observations					61
568	Minimum					15	Mean					894.4
569	Maximum					7300	Median					700
570	SD					954	Std. Error of Mean					83.35
571	Coefficient of Variation					1.067	Skewness					3.073
572												
573	**Normal GOF Test**											
574	Shapiro Wilk Test Statistic					0.764	**Shapiro Wilk GOF Test**					
575	5% Shapiro Wilk P Value					0	Data Not Normal at 5% Significance Level					
576	Lilliefors Test Statistic					0.178	**Lilliefors GOF Test**					

577				5% Lilliefors Critical Value		0.0774	Data Not Normal at 5% Significance Level					
578	**Data Not Normal at 5% Significance Level**											
579												
580	**Assuming Normal Distribution**											
581	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
582				95% Student's-t UCL		1032				95% Adjusted-CLT UCL (Chen-1995)		1055
583										95% Modified-t UCL (Johnson-1978)		1036
584												
585	**Gamma GOF Test**											
586				A-D Test Statistic		0.874	**Anderson-Darling Gamma GOF Test**					
587				5% A-D Critical Value		0.784	Data Not Gamma Distributed at 5% Significance Level					
588				K-S Test Statistic		0.0647	**Kolmogrov-Smirnoff Gamma GOF Test**					
589				5% K-S Critical Value		0.084	Detected data appear Gamma Distributed at 5% Significance Level					
590	**Detected data follow Appr. Gamma Distribution at 5% Significance Level**											
591												
592	**Gamma Statistics**											
593				k hat (MLE)		0.975				k star (bias corrected MLE)		0.957
594				Theta hat (MLE)		917.7				Theta star (bias corrected MLE)		934.2
595				nu hat (MLE)		255.4				nu star (bias corrected)		250.8
596				MLE Mean (bias corrected)		894.4				MLE Sd (bias corrected)		914.1
597										Approximate Chi Square Value (0.05)		215.2
598				Adjusted Level of Significance		0.0482				Adjusted Chi Square Value		214.8
599												
600	**Assuming Gamma Distribution**											
601				95% Approximate Gamma UCL (use when n>=50)		1043				95% Adjusted Gamma UCL (use when n<50)		1044
602												
603	**Lognormal GOF Test**											
604				Shapiro Wilk Test Statistic		0.923	**Shapiro Wilk Lognormal GOF Test**					
605				5% Shapiro Wilk P Value		1.9053E-8	Data Not Lognormal at 5% Significance Level					
606				Lilliefors Test Statistic		0.134	**Lilliefors Lognormal GOF Test**					
607				5% Lilliefors Critical Value		0.0774	Data Not Lognormal at 5% Significance Level					
608	**Data Not Lognormal at 5% Significance Level**											
609												
610	**Lognormal Statistics**											
611				Minimum of Logged Data		2.708				Mean of logged Data		6.202
612				Maximum of Logged Data		8.896				SD of logged Data		1.284
613												
614	**Assuming Lognormal Distribution**											
615				95% H-UCL		1487				90% Chebyshev (MVUE) UCL		1606
616				95% Chebyshev (MVUE) UCL		1829				97.5% Chebyshev (MVUE) UCL		2139
617				99% Chebyshev (MVUE) UCL		2747						
618												
619	**Nonparametric Distribution Free UCL Statistics**											
620	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
621												
622	**Nonparametric Distribution Free UCLs**											
623				95% CLT UCL		1032				95% Jackknife UCL		1032
624				95% Standard Bootstrap UCL		1035				95% Bootstrap-t UCL		1070

625	95% Hall's Bootstrap UCL					1097	95% Percentile Bootstrap UCL					1041
626	95% BCA Bootstrap UCL					1049						
627	90% Chebyshev(Mean, Sd) UCL					1144	95% Chebyshev(Mean, Sd) UCL					1258
628	97.5% Chebyshev(Mean, Sd) UCL					1415	99% Chebyshev(Mean, Sd) UCL					1724
629												
630	**Suggested UCL to Use**											
631	95% Approximate Gamma UCL					1043						
632												
633	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
634	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
635	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
636	For additional insight the user may want to consult a statistician.											
637												
638												
639	**Lead_Tab2_0-15**											
640												
641	**General Statistics**											
642	Total Number of Observations					132	Number of Distinct Observations					83
643							Number of Missing Observations					60
644	Minimum					5.9	Mean					1108
645	Maximum					13000	Median					790
646	SD					1626	Std. Error of Mean					141.6
647	Coefficient of Variation					1.468	Skewness					5.074
648												
649	**Normal GOF Test**											
650	Shapiro Wilk Test Statistic					0.534	**Shapiro Wilk GOF Test**					
651	5% Shapiro Wilk P Value					0	Data Not Normal at 5% Significance Level					
652	Lilliefors Test Statistic					0.252	**Lilliefors GOF Test**					
653	5% Lilliefors Critical Value					0.0771	Data Not Normal at 5% Significance Level					
654	**Data Not Normal at 5% Significance Level**											
655												
656	**Assuming Normal Distribution**											
657	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
658	95% Student's-t UCL					1342	95% Adjusted-CLT UCL (Chen-1995)					1407
659							95% Modified-t UCL (Johnson-1978)					1353
660												
661	**Gamma GOF Test**											
662	A-D Test Statistic					1.666	**Anderson-Darling Gamma GOF Test**					
663	5% A-D Critical Value					0.789	Data Not Gamma Distributed at 5% Significance Level					
664	K-S Test Statistic					0.108	**Kolmogrov-Smirnoff Gamma GOF Test**					
665	5% K-S Critical Value					0.084	Data Not Gamma Distributed at 5% Significance Level					
666	**Data Not Gamma Distributed at 5% Significance Level**											
667												
668	**Gamma Statistics**											
669	k hat (MLE)					0.889	k star (bias corrected MLE)					0.874
670	Theta hat (MLE)					1246	Theta star (bias corrected MLE)					1268
671	nu hat (MLE)					234.7	nu star (bias corrected)					230.7
672	MLE Mean (bias corrected)					1108	MLE Sd (bias corrected)					1185

673											Approximate Chi Square Value (0.05)	196.5
674					Adjusted Level of Significance	0.0482					Adjusted Chi Square Value	196.2
675												
676	**Assuming Gamma Distribution**											
677					95% Approximate Gamma UCL (use when n>=50))	1300					95% Adjusted Gamma UCL (use when n<50)	1303
678												
679	**Lognormal GOF Test**											
680					Shapiro Wilk Test Statistic	0.931	**Shapiro Wilk Lognormal GOF Test**					
681					5% Shapiro Wilk P Value	3.9355E-7	Data Not Lognormal at 5% Significance Level					
682					Lilliefors Test Statistic	0.139	**Lilliefors Lognormal GOF Test**					
683					5% Lilliefors Critical Value	0.0771	Data Not Lognormal at 5% Significance Level					
684	**Data Not Lognormal at 5% Significance Level**											
685												
686	**Lognormal Statistics**											
687					Minimum of Logged Data	1.775					Mean of logged Data	6.351
688					Maximum of Logged Data	9.473					SD of logged Data	1.31
689												
690	**Assuming Lognormal Distribution**											
691					95% H-UCL	1800					90% Chebyshev (MVUE) UCL	1943
692					95% Chebyshev (MVUE) UCL	2218					97.5% Chebyshev (MVUE) UCL	2599
693					99% Chebyshev (MVUE) UCL	3347						
694												
695	**Nonparametric Distribution Free UCL Statistics**											
696	**Data do not follow a Discernible Distribution (0.05)**											
697												
698	**Nonparametric Distribution Free UCLs**											
699					95% CLT UCL	1341					95% Jackknife UCL	1342
700					95% Standard Bootstrap UCL	1341					95% Bootstrap-t UCL	1498
701					95% Hall's Bootstrap UCL	1798					95% Percentile Bootstrap UCL	1352
702					95% BCA Bootstrap UCL	1437						
703					90% Chebyshev(Mean, Sd) UCL	1532					95% Chebyshev(Mean, Sd) UCL	1725
704					97.5% Chebyshev(Mean, Sd) UCL	1992					99% Chebyshev(Mean, Sd) UCL	2516
705												
706	**Suggested UCL to Use**											
707					95% Chebyshev (Mean, Sd) UCL	1725						
708												
709	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
710	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
711	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
712	For additional insight the user may want to consult a statistician.											
713												
714												
715	**Benzo(a)pyrene_Easement_0-15**											
716												
717	**General Statistics**											
718					Total Number of Observations	26					Number of Distinct Observations	25
719											Number of Missing Observations	0
720					Minimum	0.095					Mean	5.006

721					Maximum	25					Median	1.35
722					SD	7.509					Std. Error of Mean	1.473
723					Coefficient of Variation	1.5					Skewness	1.717
724												
725	**Normal GOF Test**											
726					Shapiro Wilk Test Statistic	0.668	**Shapiro Wilk GOF Test**					
727					5% Shapiro Wilk Critical Value	0.92	Data Not Normal at 5% Significance Level					
728					Lilliefors Test Statistic	0.343	**Lilliefors GOF Test**					
729					5% Lilliefors Critical Value	0.174	Data Not Normal at 5% Significance Level					
730	**Data Not Normal at 5% Significance Level**											
731												
732	**Assuming Normal Distribution**											
733	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
734					95% Student's-t UCL	7.521					95% Adjusted-CLT UCL (Chen-1995)	7.958
735											95% Modified-t UCL (Johnson-1978)	7.604
736												
737	**Gamma GOF Test**											
738					A-D Test Statistic	1.045	**Anderson-Darling Gamma GOF Test**					
739					5% A-D Critical Value	0.804	Data Not Gamma Distributed at 5% Significance Level					
740					K-S Test Statistic	0.184	**Kolmogrov-Smirnoff Gamma GOF Test**					
741					5% K-S Critical Value	0.181	Data Not Gamma Distributed at 5% Significance Level					
742	**Data Not Gamma Distributed at 5% Significance Level**											
743												
744	**Gamma Statistics**											
745					k hat (MLE)	0.547					k star (bias corrected MLE)	0.509
746					Theta hat (MLE)	9.155					Theta star (bias corrected MLE)	9.828
747					nu hat (MLE)	28.43					nu star (bias corrected)	26.48
748					MLE Mean (bias corrected)	5.006					MLE Sd (bias corrected)	7.014
749											Approximate Chi Square Value (0.05)	15.75
750					Adjusted Level of Significance	0.0398					Adjusted Chi Square Value	15.21
751												
752	**Assuming Gamma Distribution**											
753					95% Approximate Gamma UCL (use when n>=50))	8.416					95% Adjusted Gamma UCL (use when n<50)	8.718
754												
755	**Lognormal GOF Test**											
756					Shapiro Wilk Test Statistic	0.957	**Shapiro Wilk Lognormal GOF Test**					
757					5% Shapiro Wilk Critical Value	0.92	Data appear Lognormal at 5% Significance Level					
758					Lilliefors Test Statistic	0.0997	**Lilliefors Lognormal GOF Test**					
759					5% Lilliefors Critical Value	0.174	Data appear Lognormal at 5% Significance Level					
760	**Data appear Lognormal at 5% Significance Level**											
761												
762	**Lognormal Statistics**											
763					Minimum of Logged Data	-2.354					Mean of logged Data	0.465
764					Maximum of Logged Data	3.219					SD of logged Data	1.641
765												
766	**Assuming Lognormal Distribution**											
767					95% H-UCL	18.88					90% Chebyshev (MVUE) UCL	12.19
768					95% Chebyshev (MVUE) UCL	15.23					97.5% Chebyshev (MVUE) UCL	19.44

	A	B	C	D	E	F	G	H	I	J	K	L
769					99% Chebyshev (MVUE) UCL	27.72						
770												
771	**Nonparametric Distribution Free UCL Statistics**											
772	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
773												
774	**Nonparametric Distribution Free UCLs**											
775					95% CLT UCL	7.428				95% Jackknife UCL		7.521
776					95% Standard Bootstrap UCL	7.372				95% Bootstrap-t UCL		8.775
777					95% Hall's Bootstrap UCL	7.454				95% Percentile Bootstrap UCL		7.473
778					95% BCA Bootstrap UCL	8.128						
779					90% Chebyshev(Mean, Sd) UCL	9.423				95% Chebyshev(Mean, Sd) UCL		11.42
780					97.5% Chebyshev(Mean, Sd) UCL	14.2				99% Chebyshev(Mean, Sd) UCL		19.66
781												
782	**Suggested UCL to Use**											
783					95% Chebyshev (Mean, Sd) UCL	11.42						
784												
785	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
786	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
787	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
788	For additional insight the user may want to consult a statistician.											
789												
790												
791	**Total PCBs_Easement_0-15**											
792												
793	**General Statistics**											
794					Total Number of Observations	44				Number of Distinct Observations		43
795										Number of Missing Observations		18
796					Minimum	0.0865				Mean		9.759
797					Maximum	62.3				Median		3.4
798					SD	15.59				Std. Error of Mean		2.35
799					Coefficient of Variation	1.598				Skewness		2.674
800												
801	**Normal GOF Test**											
802					Shapiro Wilk Test Statistic	0.598	**Shapiro Wilk GOF Test**					
803					5% Shapiro Wilk Critical Value	0.944	Data Not Normal at 5% Significance Level					
804					Lilliefors Test Statistic	0.267	**Lilliefors GOF Test**					
805					5% Lilliefors Critical Value	0.134	Data Not Normal at 5% Significance Level					
806	**Data Not Normal at 5% Significance Level**											
807												
808	**Assuming Normal Distribution**											
809	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
810					95% Student's-t UCL	13.71				95% Adjusted-CLT UCL (Chen-1995)		14.64
811										95% Modified-t UCL (Johnson-1978)		13.87
812												
813	**Gamma GOF Test**											
814					A-D Test Statistic	0.857	**Anderson-Darling Gamma GOF Test**					
815					5% A-D Critical Value	0.803	Data Not Gamma Distributed at 5% Significance Level					
816					K-S Test Statistic	0.141	**Kolmogrov-Smirnoff Gamma GOF Test**					

817	5% K-S Critical Value					0.14	Data Not Gamma Distributed at 5% Significance Level					
818	**Data Not Gamma Distributed at 5% Significance Level**											
819												
820	**Gamma Statistics**											
821	k hat (MLE)					0.611	k star (bias corrected MLE)					0.585
822	Theta hat (MLE)					15.97	Theta star (bias corrected MLE)					16.69
823	nu hat (MLE)					53.79	nu star (bias corrected)					51.45
824	MLE Mean (bias corrected)					9.759	MLE Sd (bias corrected)					12.76
825							Approximate Chi Square Value (0.05)					35.98
826	Adjusted Level of Significance					0.0445	Adjusted Chi Square Value					35.54
827												
828	**Assuming Gamma Distribution**											
829	95% Approximate Gamma UCL (use when n>=50))					13.96	95% Adjusted Gamma UCL (use when n<50)					14.13
830												
831	**Lognormal GOF Test**											
832	Shapiro Wilk Test Statistic					0.976	**Shapiro Wilk Lognormal GOF Test**					
833	5% Shapiro Wilk Critical Value					0.944	Data appear Lognormal at 5% Significance Level					
834	Lilliefors Test Statistic					0.0659	**Lilliefors Lognormal GOF Test**					
835	5% Lilliefors Critical Value					0.134	Data appear Lognormal at 5% Significance Level					
836	**Data appear Lognormal at 5% Significance Level**											
837												
838	**Lognormal Statistics**											
839	Minimum of Logged Data					-2.448	Mean of logged Data					1.27
840	Maximum of Logged Data					4.132	SD of logged Data					1.561
841												
842	**Assuming Lognormal Distribution**											
843	95% H-UCL					24.95	90% Chebyshev (MVUE) UCL					22.04
844	95% Chebyshev (MVUE) UCL					26.87	97.5% Chebyshev (MVUE) UCL					33.58
845	99% Chebyshev (MVUE) UCL					46.76						
846												
847	**Nonparametric Distribution Free UCL Statistics**											
848	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
849												
850	**Nonparametric Distribution Free UCLs**											
851	95% CLT UCL					13.63	95% Jackknife UCL					13.71
852	95% Standard Bootstrap UCL					13.53	95% Bootstrap-t UCL					15.41
853	95% Hall's Bootstrap UCL					13.9	95% Percentile Bootstrap UCL					13.98
854	95% BCA Bootstrap UCL					14.8						
855	90% Chebyshev(Mean, Sd) UCL					16.81	95% Chebyshev(Mean, Sd) UCL					20
856	97.5% Chebyshev(Mean, Sd) UCL					24.44	99% Chebyshev(Mean, Sd) UCL					33.15
857												
858	**Suggested UCL to Use**											
859	95% Chebyshev (Mean, Sd) UCL					20						
860												
861	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
862	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
863	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
864	For additional insight the user may want to consult a statistician.											

	A	B	C	D	E	F	G	H	I	J	K	L
865												
866												
867	**Lead_Easement_0-15**											
868												
869	**General Statistics**											
870					Total Number of Observations	39				Number of Distinct Observations	32	
871										Number of Missing Observations	27	
872					Minimum	35				Mean	899.7	
873					Maximum	4900				Median	572	
874					SD	1059				Std. Error of Mean	169.6	
875					Coefficient of Variation	1.177				Skewness	2.356	
876												
877	**Normal GOF Test**											
878					Shapiro Wilk Test Statistic	0.725	**Shapiro Wilk GOF Test**					
879					5% Shapiro Wilk Critical Value	0.939	Data Not Normal at 5% Significance Level					
880					Lilliefors Test Statistic	0.22	**Lilliefors GOF Test**					
881					5% Lilliefors Critical Value	0.142	Data Not Normal at 5% Significance Level					
882	**Data Not Normal at 5% Significance Level**											
883												
884	**Assuming Normal Distribution**											
885	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
886					95% Student's-t UCL	1186				95% Adjusted-CLT UCL (Chen-1995)	1247	
887										95% Modified-t UCL (Johnson-1978)	1196	
888												
889	**Gamma GOF Test**											
890					A-D Test Statistic	0.516	**Anderson-Darling Gamma GOF Test**					
891					5% A-D Critical Value	0.783	Detected data appear Gamma Distributed at 5% Significance Level					
892					K-S Test Statistic	0.107	**Kolmogrov-Smirnoff Gamma GOF Test**					
893					5% K-S Critical Value	0.146	Detected data appear Gamma Distributed at 5% Significance Level					
894	**Detected data appear Gamma Distributed at 5% Significance Level**											
895												
896	**Gamma Statistics**											
897					k hat (MLE)	0.896				k star (bias corrected MLE)	0.844	
898					Theta hat (MLE)	1005				Theta star (bias corrected MLE)	1066	
899					nu hat (MLE)	69.85				nu star (bias corrected)	65.81	
900					MLE Mean (bias corrected)	899.7				MLE Sd (bias corrected)	979.5	
901										Approximate Chi Square Value (0.05)	48.14	
902					Adjusted Level of Significance	0.0437				Adjusted Chi Square Value	47.55	
903												
904	**Assuming Gamma Distribution**											
905					95% Approximate Gamma UCL (use when n>=50)	1230				95% Adjusted Gamma UCL (use when n<50)	1245	
906												
907	**Lognormal GOF Test**											
908					Shapiro Wilk Test Statistic	0.926	**Shapiro Wilk Lognormal GOF Test**					
909					5% Shapiro Wilk Critical Value	0.939	Data Not Lognormal at 5% Significance Level					
910					Lilliefors Test Statistic	0.173	**Lilliefors Lognormal GOF Test**					
911					5% Lilliefors Critical Value	0.142	Data Not Lognormal at 5% Significance Level					
912	**Data Not Lognormal at 5% Significance Level**											

913												
914	**Lognormal Statistics**											
915					Minimum of Logged Data	3.555				Mean of logged Data		6.149
916					Maximum of Logged Data	8.497				SD of logged Data		1.308
917												
918	**Assuming Lognormal Distribution**											
919					95% H-UCL	1987				90% Chebyshev (MVUE) UCL		1890
920					95% Chebyshev (MVUE) UCL	2267				97.5% Chebyshev (MVUE) UCL		2789
921					99% Chebyshev (MVUE) UCL	3815						
922												
923	**Nonparametric Distribution Free UCL Statistics**											
924	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
925												
926	**Nonparametric Distribution Free UCLs**											
927					95% CLT UCL	1179				95% Jackknife UCL		1186
928					95% Standard Bootstrap UCL	1174				95% Bootstrap-t UCL		1314
929					95% Hall's Bootstrap UCL	1313				95% Percentile Bootstrap UCL		1190
930					95% BCA Bootstrap UCL	1269						
931					90% Chebyshev(Mean, Sd) UCL	1409				95% Chebyshev(Mean, Sd) UCL		1639
932					97.5% Chebyshev(Mean, Sd) UCL	1959				99% Chebyshev(Mean, Sd) UCL		2587
933												
934	**Suggested UCL to Use**											
935					95% Adjusted Gamma UCL	1245						
936												
937	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
938	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
939	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
940	For additional insight the user may want to consult a statistician.											
941												
942												
943	**Benzo(a)anthracene_Easement_0-6**											
944												
945	**General Statistics**											
946					Total Number of Observations	22				Number of Distinct Observations		20
947										Number of Missing Observations		0
948					Minimum	0.095				Mean		7.313
949					Maximum	37				Median		2.3
950					SD	10.46				Std. Error of Mean		2.23
951					Coefficient of Variation	1.431				Skewness		1.717
952												
953	**Normal GOF Test**											
954					Shapiro Wilk Test Statistic	0.703				**Shapiro Wilk GOF Test**		
955					5% Shapiro Wilk Critical Value	0.911				Data Not Normal at 5% Significance Level		
956					Lilliefors Test Statistic	0.355				**Lilliefors GOF Test**		
957					5% Lilliefors Critical Value	0.189				Data Not Normal at 5% Significance Level		
958	**Data Not Normal at 5% Significance Level**											
959												
960	**Assuming Normal Distribution**											

	A	B	C	D	E	F	G	H	I	J	K	L
961	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
962					95% Student's-t UCL	11.15					95% Adjusted-CLT UCL (Chen-1995)	11.85
963											95% Modified-t UCL (Johnson-1978)	11.29
964												
965	**Gamma GOF Test**											
966					A-D Test Statistic	0.861	**Anderson-Darling Gamma GOF Test**					
967					5% A-D Critical Value	0.797	Data Not Gamma Distributed at 5% Significance Level					
968					K-S Test Statistic	0.219	**Kolmogrov-Smirnoff Gamma GOF Test**					
969					5% K-S Critical Value	0.195	Data Not Gamma Distributed at 5% Significance Level					
970	**Data Not Gamma Distributed at 5% Significance Level**											
971												
972	**Gamma Statistics**											
973					k hat (MLE)	0.582					k star (bias corrected MLE)	0.533
974					Theta hat (MLE)	12.56					Theta star (bias corrected MLE)	13.72
975					nu hat (MLE)	25.61					nu star (bias corrected)	23.45
976					MLE Mean (bias corrected)	7.313					MLE Sd (bias corrected)	10.02
977											Approximate Chi Square Value (0.05)	13.43
978					Adjusted Level of Significance	0.0386					Adjusted Chi Square Value	12.87
979												
980	**Assuming Gamma Distribution**											
981					95% Approximate Gamma UCL (use when n>=50))	12.77					95% Adjusted Gamma UCL (use when n<50)	13.33
982												
983	**Lognormal GOF Test**											
984					Shapiro Wilk Test Statistic	0.965	**Shapiro Wilk Lognormal GOF Test**					
985					5% Shapiro Wilk Critical Value	0.911	Data appear Lognormal at 5% Significance Level					
986					Lilliefors Test Statistic	0.12	**Lilliefors Lognormal GOF Test**					
987					5% Lilliefors Critical Value	0.189	Data appear Lognormal at 5% Significance Level					
988	**Data appear Lognormal at 5% Significance Level**											
989												
990	**Lognormal Statistics**											
991					Minimum of Logged Data	-2.354					Mean of logged Data	0.923
992					Maximum of Logged Data	3.611					SD of logged Data	1.613
993												
994	**Assuming Lognormal Distribution**											
995					95% H-UCL	32					90% Chebyshev (MVUE) UCL	18.61
996					95% Chebyshev (MVUE) UCL	23.32					97.5% Chebyshev (MVUE) UCL	29.85
997					99% Chebyshev (MVUE) UCL	42.69						
998												
999	**Nonparametric Distribution Free UCL Statistics**											
1000	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
1001												
1002	**Nonparametric Distribution Free UCLs**											
1003					95% CLT UCL	10.98					95% Jackknife UCL	11.15
1004					95% Standard Bootstrap UCL	10.84					95% Bootstrap-t UCL	13
1005					95% Hall's Bootstrap UCL	11.58					95% Percentile Bootstrap UCL	11.02
1006					95% BCA Bootstrap UCL	11.95						
1007					90% Chebyshev(Mean, Sd) UCL	14					95% Chebyshev(Mean, Sd) UCL	17.03
1008					97.5% Chebyshev(Mean, Sd) UCL	21.24					99% Chebyshev(Mean, Sd) UCL	29.51

1009												
1010	**Suggested UCL to Use**											
1011					95% Chebyshev (Mean, Sd) UCL	17.03						
1012												
1013	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
1014	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
1015	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
1016	For additional insight the user may want to consult a statistician.											
1017												
1018												
1019	**Benzo(a)pyrene_Easement_0-6**											
1020												
1021	**General Statistics**											
1022					Total Number of Observations	22			Number of Distinct Observations	21		
1023									Number of Missing Observations	0		
1024					Minimum	0.095			Mean	5.87		
1025					Maximum	25			Median	2.05		
1026					SD	7.876			Std. Error of Mean	1.679		
1027					Coefficient of Variation	1.342			Skewness	1.481		
1028												
1029	**Normal GOF Test**											
1030					Shapiro Wilk Test Statistic	0.711			**Shapiro Wilk GOF Test**			
1031					5% Shapiro Wilk Critical Value	0.911			Data Not Normal at 5% Significance Level			
1032					Lilliefors Test Statistic	0.341			**Lilliefors GOF Test**			
1033					5% Lilliefors Critical Value	0.189			Data Not Normal at 5% Significance Level			
1034	**Data Not Normal at 5% Significance Level**											
1035												
1036	**Assuming Normal Distribution**											
1037					**95% Normal UCL**				**95% UCLs (Adjusted for Skewness)**			
1038					95% Student's-t UCL	8.759			95% Adjusted-CLT UCL (Chen-1995)	9.199		
1039									95% Modified-t UCL (Johnson-1978)	8.848		
1040												
1041	**Gamma GOF Test**											
1042					A-D Test Statistic	0.919			**Anderson-Darling Gamma GOF Test**			
1043					5% A-D Critical Value	0.792			Data Not Gamma Distributed at 5% Significance Level			
1044					K-S Test Statistic	0.201			**Kolmogrov-Smirnoff Gamma GOF Test**			
1045					5% K-S Critical Value	0.194			Data Not Gamma Distributed at 5% Significance Level			
1046	**Data Not Gamma Distributed at 5% Significance Level**											
1047												
1048	**Gamma Statistics**											
1049					k hat (MLE)	0.643			k star (bias corrected MLE)	0.585		
1050					Theta hat (MLE)	9.131			Theta star (bias corrected MLE)	10.03		
1051					nu hat (MLE)	28.29			nu star (bias corrected)	25.76		
1052					MLE Mean (bias corrected)	5.87			MLE Sd (bias corrected)	7.671		
1053									Approximate Chi Square Value (0.05)	15.2		
1054					Adjusted Level of Significance	0.0386			Adjusted Chi Square Value	14.59		
1055												
1056	**Assuming Gamma Distribution**											

1057	95% Approximate Gamma UCL (use when n>=50))					9.951	95% Adjusted Gamma UCL (use when n<50)					10.36
1058												
1059	**Lognormal GOF Test**											
1060	Shapiro Wilk Test Statistic					0.957	**Shapiro Wilk Lognormal GOF Test**					
1061	5% Shapiro Wilk Critical Value					0.911	Data appear Lognormal at 5% Significance Level					
1062	Lilliefors Test Statistic					0.112	**Lilliefors Lognormal GOF Test**					
1063	5% Lilliefors Critical Value					0.189	Data appear Lognormal at 5% Significance Level					
1064	**Data appear Lognormal at 5% Significance Level**											
1065												
1066	**Lognormal Statistics**											
1067	Minimum of Logged Data					-2.354	Mean of logged Data					0.818
1068	Maximum of Logged Data					3.219	SD of logged Data					1.52
1069												
1070	**Assuming Lognormal Distribution**											
1071	95% H-UCL					22.02	90% Chebyshev (MVUE) UCL					14.19
1072	95% Chebyshev (MVUE) UCL					17.68	97.5% Chebyshev (MVUE) UCL					22.51
1073	99% Chebyshev (MVUE) UCL					32						
1074												
1075	**Nonparametric Distribution Free UCL Statistics**											
1076	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
1077												
1078	**Nonparametric Distribution Free UCLs**											
1079	95% CLT UCL					8.632	95% Jackknife UCL					8.759
1080	95% Standard Bootstrap UCL					8.616	95% Bootstrap-t UCL					9.76
1081	95% Hall's Bootstrap UCL					8.71	95% Percentile Bootstrap UCL					8.847
1082	95% BCA Bootstrap UCL					9.055						
1083	90% Chebyshev(Mean, Sd) UCL					10.91	95% Chebyshev(Mean, Sd) UCL					13.19
1084	97.5% Chebyshev(Mean, Sd) UCL					16.36	99% Chebyshev(Mean, Sd) UCL					22.58
1085												
1086	**Suggested UCL to Use**											
1087	95% Chebyshev (Mean, Sd) UCL					13.19						
1088												
1089	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
1090	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
1091	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
1092	For additional insight the user may want to consult a statistician.											
1093												
1094												
1095	**Benzo(b)fluoranthene_Easement_0-6**											
1096												
1097	**General Statistics**											
1098	Total Number of Observations					22	Number of Distinct Observations					21
1099							Number of Missing Observations					0
1100	Minimum					0.095	Mean					7.732
1101	Maximum					36	Median					2.7
1102	SD					10.66	Std. Error of Mean					2.272
1103	Coefficient of Variation					1.378	Skewness					1.645
1104												

1105	**Normal GOF Test**											
1106					Shapiro Wilk Test Statistic	0.701	**Shapiro Wilk GOF Test**					
1107					5% Shapiro Wilk Critical Value	0.911	Data Not Normal at 5% Significance Level					
1108					Lilliefors Test Statistic	0.343	**Lilliefors GOF Test**					
1109					5% Lilliefors Critical Value	0.189	Data Not Normal at 5% Significance Level					
1110	**Data Not Normal at 5% Significance Level**											
1111												
1112	**Assuming Normal Distribution**											
1113	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
1114					95% Student's-t UCL	11.64	95% Adjusted-CLT UCL (Chen-1995)	12.32				
1115							95% Modified-t UCL (Johnson-1978)	11.77				
1116												
1117	**Gamma GOF Test**											
1118					A-D Test Statistic	0.945	**Anderson-Darling Gamma GOF Test**					
1119					5% A-D Critical Value	0.791	Data Not Gamma Distributed at 5% Significance Level					
1120					K-S Test Statistic	0.227	**Kolmogrov-Smirnoff Gamma GOF Test**					
1121					5% K-S Critical Value	0.194	Data Not Gamma Distributed at 5% Significance Level					
1122	**Data Not Gamma Distributed at 5% Significance Level**											
1123												
1124	**Gamma Statistics**											
1125					k hat (MLE)	0.652	k star (bias corrected MLE)	0.594				
1126					Theta hat (MLE)	11.85	Theta star (bias corrected MLE)	13.02				
1127					nu hat (MLE)	28.7	nu star (bias corrected)	26.12				
1128					MLE Mean (bias corrected)	7.732	MLE Sd (bias corrected)	10.03				
1129							Approximate Chi Square Value (0.05)	15.47				
1130					Adjusted Level of Significance	0.0386	Adjusted Chi Square Value	14.86				
1131												
1132	**Assuming Gamma Distribution**											
1133					95% Approximate Gamma UCL (use when n>=50))	13.05	95% Adjusted Gamma UCL (use when n<50)	13.59				
1134												
1135	**Lognormal GOF Test**											
1136					Shapiro Wilk Test Statistic	0.96	**Shapiro Wilk Lognormal GOF Test**					
1137					5% Shapiro Wilk Critical Value	0.911	Data appear Lognormal at 5% Significance Level					
1138					Lilliefors Test Statistic	0.136	**Lilliefors Lognormal GOF Test**					
1139					5% Lilliefors Critical Value	0.189	Data appear Lognormal at 5% Significance Level					
1140	**Data appear Lognormal at 5% Significance Level**											
1141												
1142	**Lognormal Statistics**											
1143					Minimum of Logged Data	-2.354	Mean of logged Data	1.11				
1144					Maximum of Logged Data	3.584	SD of logged Data	1.499				
1145												
1146	**Assuming Lognormal Distribution**											
1147					95% H-UCL	27.79	90% Chebyshev (MVUE) UCL	18.31				
1148					95% Chebyshev (MVUE) UCL	22.77	97.5% Chebyshev (MVUE) UCL	28.95				
1149					99% Chebyshev (MVUE) UCL	41.11						
1150												
1151	**Nonparametric Distribution Free UCL Statistics**											
1152	**Data appear to follow a Discernible Distribution at 5% Significance Level**											

1153												
1154	**Nonparametric Distribution Free UCLs**											
1155					95% CLT UCL	11.47				95% Jackknife UCL	11.64	
1156					95% Standard Bootstrap UCL	11.4				95% Bootstrap-t UCL	13.09	
1157					95% Hall's Bootstrap UCL	11.84				95% Percentile Bootstrap UCL	11.53	
1158					95% BCA Bootstrap UCL	12.18						
1159					90% Chebyshev(Mean, Sd) UCL	14.55				95% Chebyshev(Mean, Sd) UCL	17.63	
1160					97.5% Chebyshev(Mean, Sd) UCL	21.92				99% Chebyshev(Mean, Sd) UCL	30.34	
1161												
1162	**Suggested UCL to Use**											
1163					95% Chebyshev (Mean, Sd) UCL	17.63						
1164												
1165	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
1166	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
1167	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
1168	For additional insight the user may want to consult a statistician.											
1169												
1170												
1171	**Total PCBs_Easement_0-6**											
1172												
1173	**General Statistics**											
1174					Total Number of Observations	40				Number of Distinct Observations	39	
1175										Number of Missing Observations	18	
1176					Minimum	0.27				Mean	10.66	
1177					Maximum	62.3				Median	3.825	
1178					SD	16.09				Std. Error of Mean	2.544	
1179					Coefficient of Variation	1.51				Skewness	2.538	
1180												
1181	**Normal GOF Test**											
1182					Shapiro Wilk Test Statistic	0.615	**Shapiro Wilk GOF Test**					
1183					5% Shapiro Wilk Critical Value	0.94	Data Not Normal at 5% Significance Level					
1184					Lilliefors Test Statistic	0.259	**Lilliefors GOF Test**					
1185					5% Lilliefors Critical Value	0.14	Data Not Normal at 5% Significance Level					
1186	**Data Not Normal at 5% Significance Level**											
1187												
1188	**Assuming Normal Distribution**											
1189	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
1190					95% Student's-t UCL	14.94				95% Adjusted-CLT UCL (Chen-1995)	15.93	
1191										95% Modified-t UCL (Johnson-1978)	15.11	
1192												
1193	**Gamma GOF Test**											
1194					A-D Test Statistic	0.935	**Anderson-Darling Gamma GOF Test**					
1195					5% A-D Critical Value	0.794	Data Not Gamma Distributed at 5% Significance Level					
1196					K-S Test Statistic	0.145	**Kolmogrov-Smirnoff Gamma GOF Test**					
1197					5% K-S Critical Value	0.146	Detected data appear Gamma Distributed at 5% Significance Level					
1198	**Detected data follow Appr. Gamma Distribution at 5% Significance Level**											
1199												
1200	**Gamma Statistics**											

1201					k hat (MLE)	0.695				k star (bias corrected MLE)		0.659
1202					Theta hat (MLE)	15.34				Theta star (bias corrected MLE)		16.17
1203					nu hat (MLE)	55.56				nu star (bias corrected)		52.73
1204					MLE Mean (bias corrected)	10.66				MLE Sd (bias corrected)		13.13
1205										Approximate Chi Square Value (0.05)		37.05
1206					Adjusted Level of Significance	0.044				Adjusted Chi Square Value		36.56
1207												
1208	**Assuming Gamma Distribution**											
1209			95% Approximate Gamma UCL (use when n>=50)			15.17				95% Adjusted Gamma UCL (use when n<50)		15.37
1210												
1211	**Lognormal GOF Test**											
1212					Shapiro Wilk Test Statistic	0.974				**Shapiro Wilk Lognormal GOF Test**		
1213					5% Shapiro Wilk Critical Value	0.94				Data appear Lognormal at 5% Significance Level		
1214					Lilliefors Test Statistic	0.0686				**Lilliefors Lognormal GOF Test**		
1215					5% Lilliefors Critical Value	0.14				Data appear Lognormal at 5% Significance Level		
1216	**Data appear Lognormal at 5% Significance Level**											
1217												
1218	**Lognormal Statistics**											
1219					Minimum of Logged Data	-1.309				Mean of logged Data		1.495
1220					Maximum of Logged Data	4.132				SD of logged Data		1.39
1221												
1222	**Assuming Lognormal Distribution**											
1223					95% H-UCL	22.33				90% Chebyshev (MVUE) UCL		20.6
1224					95% Chebyshev (MVUE) UCL	24.86				97.5% Chebyshev (MVUE) UCL		30.77
1225					99% Chebyshev (MVUE) UCL	42.38						
1226												
1227	**Nonparametric Distribution Free UCL Statistics**											
1228	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
1229												
1230	**Nonparametric Distribution Free UCLs**											
1231					95% CLT UCL	14.84				95% Jackknife UCL		14.94
1232					95% Standard Bootstrap UCL	14.7				95% Bootstrap-t UCL		16.78
1233					95% Hall's Bootstrap UCL	15.12				95% Percentile Bootstrap UCL		15.08
1234					95% BCA Bootstrap UCL	15.73						
1235					90% Chebyshev(Mean, Sd) UCL	18.29				95% Chebyshev(Mean, Sd) UCL		21.75
1236					97.5% Chebyshev(Mean, Sd) UCL	26.54				99% Chebyshev(Mean, Sd) UCL		35.97
1237												
1238	**Suggested UCL to Use**											
1239					95% Adjusted Gamma UCL	15.37						
1240												
1241	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
1242	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
1243	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
1244	For additional insight the user may want to consult a statistician.											
1245												
1246												
1247	**Lead_Easement_0-6**											
1248												

	A	B	C	D	E	F	G	H	I	J	K	L
1249	**General Statistics**											
1250	Total Number of Observations					35	Number of Distinct Observations					29
1251							Number of Missing Observations					27
1252	Minimum					41	Mean					988.4
1253	Maximum					4900	Median					658
1254	SD					1083	Std. Error of Mean					183.1
1255	Coefficient of Variation					1.096	Skewness					2.266
1256												
1257	**Normal GOF Test**											
1258	Shapiro Wilk Test Statistic					0.735	**Shapiro Wilk GOF Test**					
1259	5% Shapiro Wilk Critical Value					0.934	Data Not Normal at 5% Significance Level					
1260	Lilliefors Test Statistic					0.23	**Lilliefors GOF Test**					
1261	5% Lilliefors Critical Value					0.15	Data Not Normal at 5% Significance Level					
1262	**Data Not Normal at 5% Significance Level**											
1263												
1264	**Assuming Normal Distribution**											
1265	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
1266	95% Student's-t UCL					1298	95% Adjusted-CLT UCL (Chen-1995)					1364
1267							95% Modified-t UCL (Johnson-1978)					1310
1268												
1269	**Gamma GOF Test**											
1270	A-D Test Statistic					0.512	**Anderson-Darling Gamma GOF Test**					
1271	5% A-D Critical Value					0.775	Detected data appear Gamma Distributed at 5% Significance Level					
1272	K-S Test Statistic					0.129	**Kolmogrov-Smirnoff Gamma GOF Test**					
1273	5% K-S Critical Value					0.153	Detected data appear Gamma Distributed at 5% Significance Level					
1274	**Detected data appear Gamma Distributed at 5% Significance Level**											
1275												
1276	**Gamma Statistics**											
1277	k hat (MLE)					1.058	k star (bias corrected MLE)					0.986
1278	Theta hat (MLE)					934.2	Theta star (bias corrected MLE)					1002
1279	nu hat (MLE)					74.06	nu star (bias corrected)					69.05
1280	MLE Mean (bias corrected)					988.4	MLE Sd (bias corrected)					995.2
1281							Approximate Chi Square Value (0.05)					50.92
1282	Adjusted Level of Significance					0.0425	Adjusted Chi Square Value					50.18
1283												
1284	**Assuming Gamma Distribution**											
1285	95% Approximate Gamma UCL (use when n>=50)					1340	95% Adjusted Gamma UCL (use when n<50)					1360
1286												
1287	**Lognormal GOF Test**											
1288	Shapiro Wilk Test Statistic					0.931	**Shapiro Wilk Lognormal GOF Test**					
1289	5% Shapiro Wilk Critical Value					0.934	Data Not Lognormal at 5% Significance Level					
1290	Lilliefors Test Statistic					0.183	**Lilliefors Lognormal GOF Test**					
1291	5% Lilliefors Critical Value					0.15	Data Not Lognormal at 5% Significance Level					
1292	**Data Not Lognormal at 5% Significance Level**											
1293												
1294	**Lognormal Statistics**											
1295	Minimum of Logged Data					3.714	Mean of logged Data					6.354
1296	Maximum of Logged Data					8.497	SD of logged Data					1.179

1297												
1298	**Assuming Lognormal Distribution**											
1299					95% H-UCL	1982				90% Chebyshev (MVUE) UCL		1919
1300					95% Chebyshev (MVUE) UCL	2283				97.5% Chebyshev (MVUE) UCL		2788
1301					99% Chebyshev (MVUE) UCL	3780						
1302												
1303	**Nonparametric Distribution Free UCL Statistics**											
1304	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
1305												
1306	**Nonparametric Distribution Free UCLs**											
1307					95% CLT UCL	1290				95% Jackknife UCL		1298
1308					95% Standard Bootstrap UCL	1275				95% Bootstrap-t UCL		1484
1309					95% Hall's Bootstrap UCL	1456				95% Percentile Bootstrap UCL		1310
1310					95% BCA Bootstrap UCL	1379						
1311					90% Chebyshev(Mean, Sd) UCL	1538				95% Chebyshev(Mean, Sd) UCL		1786
1312					97.5% Chebyshev(Mean, Sd) UCL	2132				99% Chebyshev(Mean, Sd) UCL		2810
1313												
1314	**Suggested UCL to Use**											
1315					95% Adjusted Gamma UCL	1360						
1316												
1317	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
1318	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
1319	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
1320	For additional insight the user may want to consult a statistician.											
1321												

ATTACHMENT 3

TRENCH AIR MODELING

Table 1 Exposure-point concentrations (inhalation) for construction/utility workers in a trench: Groundwater less than 15 feet deep Nemasket Street Utility Easement New Bedford, Massachusetts	CAS No.	Molecular Weight MWi g/mol	Henry's Law Constant Hi atm-m3/mol	Gas-Phase Mass Transfer Coefficient KiG cm/s	Liquid-Phase Mass Transfer Coefficient KiL cm/s	Overall Mass Transfer Coefficient Ki cm/s	Concentration of Contaminant in Groundwater Cgw ug/L	Volatilization Factor VF L/m3	Concentration of Contaminant in Trench Ctrench ug/m3	Concentration of Contaminant in Trench Ctrench mg/m3
Trichloroethene	79-01-6	131.39	1.03E-02	4.08E-01	9.41E-04	9.36E-04	1.10E+00	3.84E-02	4.22E-02	4.22E-05

For Mass-Transfer Coefficients

Kg,H2O	0.833	cm/s
MWH2O	18	
Kg,O2	0.002	cm/s
MWO2	32	
T	**51.6**	F
T	284	K
R	8.20E-05	atm-m3/mol-K

For Emission Flux and Concentration in Trench

CF1	1.00E-03	L/cm3
CF2	1.00E+04	cm2/m2
CF3	3600	s/hr
F	**1**	
ACH	360	hr-1

Trench dimensions

Length	**31.5**	ft
	9.60	m
Width	**31.5**	ft
	9.60	m
Depth	**8**	ft
	2.44	m
Width/Depth	3.94	

Table 2 Exposure-point concentrations (inhalation) for construction/utility worker in a trench: Groundwater less than 15 feet deep Nemasket Street Lots New Bedford, Massachusetts	CAS No.	Molecular Weight MWi g/mol	Henry's Law Constant Hi atm-m3/mol	Gas-Phase Mass Transfer Coefficient KiG cm/s	Liquid-Phase Mass Transfer Coefficient KiL cm/s	Overall Mass Transfer Coefficient Ki cm/s	Concentration of Contaminant in Groundwater Cgw ug/L	Volatilization Factor VF L/m3	Concentration of Contaminant in Trench Ctrench ug/m3	Concentration of Contaminant in Trench Ctrench mg/m3
cis-1,2-Dichloroethene	156-59-2	96.94	4.08E-03	4.52E-01	1.10E-03	1.08E-03	3.00E+00	4.43E-02	1.33E-01	1.33E-04
Tetrachloroethene	127-18-4	165.83	1.84E-02	3.77E-01	8.37E-04	8.35E-04	1.30E+01	3.42E-02	4.45E-01	4.45E-04
Trichloroethene	79-01-6	131.39	1.03E-02	4.08E-01	9.41E-04	9.36E-04	2.40E+00	3.84E-02	9.21E-02	9.21E-05

For Mass-Transfer Coefficients

Kg,H2O	0.833	cm/s
MWH2O	18	
Kg,O2	0.002	cm/s
MWO2	32	
T	**51.6**	F
T	284	K
R	8.20E-05	atm-m3/mol-K

For Emission Flux and Concentration in Trench

CF1	1.00E-03	L/cm3
CF2	1.00E+04	cm2/m2
CF3	3600	s/hr
F	**1**	
ACH	360	hr-1

Trench dimensions

Length	**31.5**	ft
	9.60	m
Width	**31.5**	ft
	9.60	m
Depth	**8**	ft
	2.44	m
Width/Depth	3.94	

Table 3
SOIL TO OUTDOOR AIR - Maximum Concentrations
Nemasket Street Utility Easement - New Bedford, Massachusetts

	Soil EPC	Soil Temp.	Soil Temp.	Henry's Law Constant at ref. temp.	Henry's Law Reference Temp.	Normal Boiling Point	Enthalpy of vaporization at T_S	Critical Temp.	constant	Enthalpy of vaporization at T_S	Gas Constant	Henry's Law Constant at T_S	Gas Constant	Henry's Law Constant
	C_R	T_S	T'_S	H_R	T_R	T_B	$\Delta H_{v,B}$	T_C	n	$\Delta H_{v,TS}$	R_c	H_{TS}	R	H'_{TS}
Units:	µg/kg	°C	K	atm-m^3/mol	K	K	cal/mol	K	unitless	cal/mol	cal/mol-K	atm-m^3/mol	m^3-atm/mol-K	unitless
Formula:	**Input**	(10 for screening)	(T_S + 273.15)	lookup	(lookup+273.15)	lookup	lookup	lookup	(Note 7)	(Note 8)		(Note 9)		H_{TS} / (R * T'_S)
Analyte														
C9-C10 Aromatics	**2.50E+04**	1.00E+01	2.83E+02	7.92E-03	2.98E+02	NA	NA	NA	NA	NA	1.99E+00	7.92E-03	8.21E-05	3.41E-01
C9-C12 Aliphatics	**2.50E+04**	1.00E+01	2.83E+02	1.56E+00	2.98E+02	NA	NA	NA	NA	NA	1.99E+00	1.56E+00	8.21E-05	6.71E+01
Ethylbenzene	**3.80E+03**	1.00E+01	2.83E+02	7.88E-03	2.98E+02	4.09E+02	8.50E+03	6.17E+02	3.75E-01	1.02E+04	1.99E+00	3.18E-03	8.21E-05	1.37E-01
Naphthalene	**3.60E+04**	1.00E+01	2.83E+02	4.83E-04	2.98E+02	4.91E+02	1.04E+04	7.48E+02	3.70E-01	1.29E+04	1.99E+00	1.52E-04	8.21E-05	6.55E-03
Toluene	**1.50E+03**	1.00E+01	2.83E+02	6.64E-03	2.98E+02	3.84E+02	7.93E+03	5.92E+02	3.64E-01	9.15E+03	1.99E+00	2.93E-03	8.21E-05	1.26E-01
Xylene (total)	**1.95E+04**	1.00E+01	2.83E+02	6.73E-03	2.98E+02	4.12E+02	8.53E+03	6.16E+02	3.78E-01	1.02E+04	1.99E+00	2.69E-03	8.21E-05	1.16E-01

Table 3 (continued)
SOIL TO OUTDOOR AIR - Maximum Concentrations
Nemasket Street Utility Easement - New Bedford, Massachusetts

	Conversion Factor µg/kg to g/g	SCS soil type in vadose zone	Vadose zone soil dry bulk density	Vadose zone soil water-filled porosity	Organic carbon partition coefficient	Vadose zone organic carbon fraction	Soil-water partition coefficient	Vadose zone soil total porosity	Vadose zone soil air-filled porosity	Conversion Factor g/cm^3 to $\mu g/m^3$	Source Vapor Conc.
	Conv01	ST_v	ρ_b	$\theta_{w,v}$	K_{oc}	$f_{oc,v}$	K_d	n_v	$\theta_{a,v}$	Conv03	C_{source}
Units:	µg/kg / g/g	unitless	g/cm^3	cm^3/cm^3	cm^3/g	unitless	cm^3/g	cm^3/cm^3	cm^3/cm^3	g/cm^3 / $\mu g/m^3$	$\mu g/m^3$
Formula:		(Note 11)	lookup	lookup	lookup	(0.002 for screening)	$K_{oc} * f_{oc}$	lookup	$n_v - \theta_{w,v}$		(Note 21)
Analyte											
C9-C10 Aromatics	1.00E-09	SCL	1.63E+00	1.46E-01	1.78E+03	2.00E-03	3.56E+00	3.84E-01	2.38E-01	1.00E+12	2.31E+06
C9-C12 Aliphatics	1.00E-09	SCL	1.63E+00	1.46E-01	1.50E+05	2.00E-03	3.00E+02	3.84E-01	2.38E-01	1.00E+12	5.42E+06
Ethylbenzene	1.00E-09	SCL	1.63E+00	1.46E-01	2.04E+02	2.00E-03	4.08E-01	3.84E-01	2.38E-01	1.00E+12	1.00E+06
Naphthalene	1.00E-09	SCL	1.63E+00	1.46E-01	1.19E+03	2.00E-03	2.38E+00	3.84E-01	2.38E-01	1.00E+12	9.55E+04
Toluene	1.00E-09	SCL	1.63E+00	1.46E-01	1.40E+02	2.00E-03	2.80E-01	3.84E-01	2.38E-01	1.00E+12	4.87E+05
Xylene (total)	1.00E-09	SCL	1.63E+00	1.46E-01	2.49E+02	2.00E-03	4.99E-01	3.84E-01	2.38E-01	1.00E+12	3.73E+06

Table 3 (continued)
SOIL TO OUTDOOR AIR - Maximum Concentrations
Nemasket Street Utility Easement - New Bedford, Massachusetts

	Depth below grade to bottom of trench	Depth below grade to contamination	Source Trench Separation	Diffusivity in air	Diffusivity in water	Vadose zone Effective Diffusion Coeff.	Total Overall Effective Diffusion Coeff.	Area of Trench Below Grade	Trench Ventilation Rate	Pressure Diff. between soil & enclosed space	Vadose zone soil saturated hydraulic conductivity	Conversion Factor hr to s
	L_F	L_t	L_T	D_a	D_w	D_v^{eff}	D_T^{eff}	A_B	Q_{trench}	ΔP	$K_{s,v}$	Conv02
Units:	cm	cm	cm	cm^2/s	cm^2/s	cm^2/s	cm^2/s	cm^2	cm^3/s	$g/cm\text{-}s^2$	cm/hr	s/hr
Formula:	(120 (4') for screening)	(400 for screening)	$L_t - L_F$	lookup	lookup	(Note 13)	(Note 4)	(Note 2)	(Note 22)	(40 for screening)	lookup	
Analyte												
C9-C10 Aromatics	1.20E+02	4.00E+02	2.80E+02	7.00E-02	5.00E-06	3.99E-03	3.99E-03	3.29E+05	1.70E+05	4.00E+01	5.50E-01	3.60E+03
C9-C12 Aliphatics	1.20E+02	4.00E+02	2.80E+02	7.00E-02	5.00E-06	3.99E-03	3.99E-03	3.29E+05	1.70E+05	4.00E+01	5.50E-01	3.60E+03
Ethylbenzene	1.20E+02	4.00E+02	2.80E+02	7.50E-02	7.80E-06	4.27E-03	4.27E-03	3.29E+05	1.70E+05	4.00E+01	5.50E-01	3.60E+03
Naphthalene	1.20E+02	4.00E+02	2.80E+02	5.90E-02	7.50E-06	3.37E-03	3.37E-03	3.29E+05	1.70E+05	4.00E+01	5.50E-01	3.60E+03
Toluene	1.20E+02	4.00E+02	2.80E+02	8.70E-02	8.60E-06	4.95E-03	4.95E-03	3.29E+05	1.70E+05	4.00E+01	5.50E-01	3.60E+03
Xylene (total)	1.20E+02	4.00E+02	2.80E+02	7.69E-02	8.44E-06	4.38E-03	4.38E-03	3.29E+05	1.70E+05	4.00E+01	5.50E-01	3.60E+03

Table 3 (continued)
SOIL TO OUTDOOR AIR - Maximum Concentrations
Nemasket Street Utility Easement - New Bedford, Massachusetts

	Viscosity of water at 10^0C	Viscosity of water at system temp.	Density of water	Acceleration due to gravity	Vadose zone soil intrinsic permeability	Vadose zone residual soil water content	Vadose zone effective total fluid saturation	Vadose zone van Genuchten shape parameter	Vadose zone soil relative air permeability	Vadose zone soil effective vapor permeability	Thickness of soil between soilgas & trench
	$\mu_{w\text{-}10}$	μ_w	ρ_w	g	$k_{i,v}$	$\theta_{r,v}$	S_{te}	M_v	k_{rg}	k_v	L_{soil}
Units:	g/cm-s	g/cm-s	g/cm^3	cm/s^2	cm^2	cm^3/cm^3	unitless	unitless	unitless	cm^2	cm
Formula:		(Note 16)	(0.999 for screening)		(Note 17)	lookup	(Note 18)	lookup	(Note 19)	(Note 20)	(1 for screening)
Analyte											
C9-C10 Aromatics	1.31E-02	1.31E-02	9.99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09	1.00E+00
C9-C12 Aliphatics	1.31E-02	1.31E-02	9.99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09	1.00E+00
Ethylbenzene	1.31E-02	1.31E-02	9.99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09	1.00E+00
Naphthalene	1.31E-02	1.31E-02	9.99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09	1.00E+00
Toluene	1.31E-02	1.31E-02	9.99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09	1.00E+00
Xylene (total)	1.31E-02	1.31E-02	9.99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09	1.00E+00

Table 3 (continued)
SOIL TO OUTDOOR AIR - Maximum Concentrations
Nemasket Street Utility Easement - New Bedford, Massachusetts

	Vapor viscosity at avg. soil temp.	Avg. Vapor Flow Rate Into trench	Infinite Source Attenuation Coeff.	Infinite Source Trench Conc.
	μ_{TS}	Q_{soil}	α	C_{trench}
Units:	g/cm-s	cm^3/s	unitless	$\mu g/m^3$
Formula:	0.00018*(T'$_S$/298.15)^0.5	(Note 5)	(Note 6)	$C_{source} * \alpha$
Analyte				
C9-C10 Aromatics	1.75E-04	3.99E-04	2.35E-09	5.42E-03
C9-C12 Aliphatics	1.75E-04	3.99E-04	2.35E-09	1.27E-02
Ethylbenzene	1.75E-04	3.99E-04	2.35E-09	2.36E-03
Naphthalene	1.75E-04	3.99E-04	2.35E-09	2.24E-04
Toluene	1.75E-04	3.99E-04	2.35E-09	1.15E-03
Xylene (total)	1.75E-04	3.99E-04	2.35E-09	8.77E-03

Table 3 (continued)
SOIL TO OUTDOOR AIR - Maximum Concentrations
Nemasket Street Utility Easement - New Bedford, Massachusetts

Notes:

Reference: *User's Guide for Evaluating Subsurface Vapor Intrusion into Buildings* , USEPA, June 19, 2003.

(1) Purposely left blank

(2) For screening, assume a trench 4 ft deep, 3 ft wide, and 30 ft long.

(3) Purposely left blank

(4) $D_T^{eff} = L_T / (L_T / D_v^{eff})$

(5) $Q_{soil} = \Delta P * k_v * L_{soil}) / \mu_{TS}$; not from above reference

(6) $\alpha = [D_T^{eff} * A_B/(Q_{trench} * L_T)]/[(D_T^{eff} * A_B/(Q_{soil} * L_T))+1]$; assumes no resistance (Peclet number is infinite)

(7) A function of the ratio T_B/T_C:

T_B/T_C	n
<0.57	0.30
0.57-0.71	$0.74(T_B/T_C)-0.116$
>0.71	0.41

If values are not available for calculation, result is NA.

(8) $\Delta H_{v,TS} = \Delta H_{v,B} * [(1-T_S/T_C)/(1-T_B/T_C)]^n$; if values are not available for calculation, result is NA.
cleared from the trench air space.

(9) $H_{TS} = EXP[-\Delta H_{v,TS}/R_c * (1/T_S - 1/T_R)] * H_R$; if values are not available for calculation, result assumed to be H_R

(10) Purposely left blank

(11) Refer to 12 SCS soil types - if no site-specific information is available, use SCL for screening.
that the wind speed in the trench is a small fraction of the ground wind speed and that it could take up to 1 minute for a contaminant to be cleared from the trench air space.

(12) Purposely left blank

(13) $D_v^{eff} = D_a * (\theta_{a,v}^{3.33}/n_v^2) + (D_w/H'_{TS})(\theta_{w,v}^{3.33}/n_v^2)$

(14) Purposely left blank

(15) Purposely left blank

(16) $\mu_w = \mu_{w-10} * (T'_S / 283.15)^{0.5}$

(17) $k_{i,v} = K_{s,v} * 1/Conv02 * \mu_w / (\rho_w * g)$

(18) $S_{te} = (\theta_{w,v} - \theta_{r,v}) / (n_v - \theta_{r,v})$

(19) $k_{rg} = (1 - S_{te})^{0.5} * (1 - S_{te}^{1/Mv})^{2Mv}$

(20) $k_v = k_{i,v} * k_{rg}$; note that the model is very sensitive to this parameter and if site-specific values are available, they should be used.

(21) $C_{source} = H'_{TS} * C_R * Conv01 * \rho_b / (\theta_{w,v} + K_d * \rho_b + H'_{TS} * \theta_{a,v}) * Conv02$

(22) For screening, assume a trench 4 ft deep, 3 ft wide, 30 ft long and an air exchange rate of 60/hr. The air exchange rate is based on the assumption that the wind speed in the trench is a small fraction of the ground wind speed and that it could take up to 1 minute for a contaminant to be cleared from the trench air space.

ATTACHMENT 4

SHORTFORMS AND RISK CALCULATION SPREADSHEETS

Table 1
Utility Worker
Dermal Contact with Groundwater - MW-37, MW-39 and MW-3
Nemasket Street Utility Easement
New Bedford, Massachusetts

	Constituent	Ground Water Concentration (mg/l)	Kp cm/hr	RAF Dermal Cancer (--)	LADD Cancer (mg/kg-d)	RAF Dermal Noncancer (--)	ADD Noncancer (mg/kg-d)	Toxicity Values: Cancer Slope Factor (mg/kg-d)-1	Toxicity Values: Subchronic Non-Cancer Reference Dose (mg/kg-d)	Risk Estimates: Cancer Risk (--)	Risk Estimates: Non-Cancer Hazard Quotient (--)
VOCs											
79-01-6	Trichloroethene	1.1E-03	1.2E-02	1.00	1.6E-08	1.00	2.2E-06	5.0E-02	5.0E-04	8.E-10	4.4E-03
Metals											
7440-38-2	Arsenic	9.3E-04	1.0E-03	1.00	1.1E-09	1.00	1.6E-07	1.5E+00	3.0E-04	2.E-09	5.3E-04
7440-39-3	Barium	3.0E-01	1.0E-03	NC	NA	1.00	5.1E-05	NA	7.0E-02	NA	7.3E-04
18540-29-9	Chromium VI	1.5E-03	2.0E-03	NC	NA	1.00	5.1E-07	NA	2.0E-02	NA	2.6E-05
7439-92-1	Lead	6.3E-03	1.0E-04	NC	NA	1.00	1.1E-07	NA	7.5E-04	NA	1.4E-04
7440-02-0	Nickel	1.2E-02	2.0E-04	NC	NA	1.00	4.1E-07	NA	2.0E-02	NA	2.1E-05
7440-66-6	Zinc	4.7E-02	6.0E-04	NC	NA	1.00	4.8E-06	NA	3.0E-01	NA	1.6E-05

NA = Not Applicable
NC = No Criteria

LADD = Lifetime Average Daily Dose
RAF = Relative Absorption Coefficient
ADD = Average Daily Dose

	Cancer Risk	Hazard Index
TOTAL:	2.5E-09	5.8E-03

Bold = Cancer Risk >1.0E-05 or Hazard Quotient > 1.0E+00

Where:
LADD = (EPC x SA x Kp x RAF x ED x EF x EP x UC)/(BW x APcancer)
ADD = (EPC x SA x Kp x RAF x ED x EF x EP x UC)/(BW x APnoncancer)

Constituent Specific (CS)

Exposure Point Concentration (EPC):	CS	mg/l
Skin surface area (SA):	3477	cm2 [1]
Permeability constant (Kp):	CS	cm/h
Exposure Duration (ED):	8	hours/event [2]
Exposure Frequency (EF):	0.36	events/d [2]
Exposure Period (EP):	182	days [1]
Units Conversion (UC):	0.001	l/cm3
Body Weight (BW):	58	kg [1]
Averaging Period (APcancer):	25550	days [1]
Averaging Period (APnoncancer):	182	days [1]

[1] MADEP, 2014
[2] Best Professional Judgement

Table 2
Utility Worker
Inhalation of Trench Air Exposure Pathway - Soil and Groundwater (Maximum Scenario)
Nemasket Street Utility Easement
New Bedford, Massachusetts

		EPC	Estimated Dose		Toxicity Values		Risk Estimates	
	Constituent	Trench Air Concentration µg/m3	ADEcancer (Cancer) µg/m3	ADEnon-cancer (Non-cancer) µg/m3	Unit Risk µg/m3	Subchronic Noncancer Reference Concentration µg/m3	Cancer Risk (--)	Hazard Quotient (--)
VOCs								
100-41-4	Ethylbezene	2.4E-03	2.0E-06	2.8E-04	NA	9.0E+03	NA	3.E-08
108-88-3	Toluene	1.2E-03	9.8E-07	1.4E-04	NA	5.0E+03	NA	3.E-08
79-01-6	Trichloroethene	4.2E-02	3.6E-05	5.1E-03	4.0E-06	2.0E+00	1.E-10	3.E-03
C9-C12	C9-C12 Aliphatics	1.3E-02	1.1E-05	1.5E-03	NA	6.0E+02	NA	3.E-06
1330-20-7	Xylenes	8.8E-03	7.5E-06	1.1E-03	NA	4.0E+02	NA	3.E-06
91-20-3	Naphthalane	2.2E-04	1.9E-07	2.7E-05	NA	3.0E+00	NA	9.E-06
C9-C10	C9-C10 Aromatics	5.4E-03	4.6E-06	6.5E-04	NA	5.0E+02	NA	1.E-06

	Cancer Risk	Hazard Index
TOTAL:	1.4E-10	2.5E-03

Bold = Cancer Risk >1.0E-05 or Hazard Quotient > 1.0E+00

Where:

LADEcancer = IAC x EFx ED x EP/APcancer
ADEnon-cancer = IAC x EF x ED x EP / APnon-cancer
Cancer Risk = LADEcancer x UR
Hazard Quotient = ADEnon-cancer / Inhalation Reference Concentration

LADE = Life Time Average Daily Exposure
ADE = Average Daily Exposure
EPC = Exposure Point Concentration
$\mu g/m^3$ = micrograms per cubic meter

And where:

Exposure Frequency (EF) =	130	days/year (5 days a week for 26 weeks of exposure)
Exposure Duration (ED) =	8	hrs/day [1]
Exposure Period (EP) =	0.5	yr [1]
Unit Conversion (UC) =	0.042	days/hr
Averaging Period (APcancer) =	25550	days [1]
Averaging Period (APnon-cancer) =	182	days [1]

[1] MADEP, 2014

Table 3
Utility Worker
Dermal Contact with Groundwater - MW-37, MW-38 and MW-39
Nemasket Street Lots
New Bedford, Massachusetts

Constituent		Ground Water Concentration (mg/l)	Kp cm/hr	RAF Dermal Cancer (--)	LADD Cancer (mg/kg-d)	RAF Dermal Noncancer (--)	ADD Noncancer (mg/kg-d)	Toxicity Values: Cancer Slope Factor (mg/kg-d)-1	Toxicity Values: Subchronic Non-Cancer Reference Dose (mg/kg-d)	Risk Estimates: Cancer Risk (--)	Risk Estimates: Non-Cancer Hazard Quotient (--)
VOCs											
127-18-4	Tetrachloroethene	1.3E-02	3.3E-02	1.00	5.2E-07	1.00	7.3E-05	2.0E-02	6.0E-03	1.E-08	1.2E-02
79-01-6	Trichloroethene	2.4E-03	1.2E-02	1.00	3.4E-08	1.00	4.8E-06	5.0E-02	5.0E-04	2.E-09	9.5E-03
156-59-2	cis-1,2-Dichloroethene	3.0E-03	7.7E-03	NC	NA	1.00	3.9E-06	NA	2.0E-02	NA	2.0E-04
Metals											
7440-38-2	Arsenic	9.6E-04	1.0E-03	1.00	1.2E-09	1.00	1.6E-07	1.5E+00	3.0E-04	2.E-09	5.5E-04
7440-39-3	Barium	2.4E-01	1.0E-03	NC	NA	1.00	4.1E-05	NA	7.0E-02	NA	5.9E-04
18540-29-9	Chromium VI	9.5E-04	2.0E-03	NC	NA	1.00	3.3E-07	NA	2.0E-02	NA	1.6E-05
7440-02-0	Nickel	1.2E-02	2.0E-04	NC	NA	1.00	4.1E-07	NA	2.0E-02	NA	2.1E-05
7440-66-6	Zinc	4.7E-02	6.0E-04	NC	NA	1.00	4.8E-06	NA	3.0E-01	NA	1.6E-05

NA = Not Applicable
NC = No Criteria

LADD = Lifetime Average Daily Dose
RAF = Relative Absorption Coefficient
ADD = Average Daily Dose

	Cancer Risk	Hazard Index
TOTAL:	1.4.E-08	2.3E-02

Bold = Cancer Risk >1.0E-05 or Hazard Quotient > 1.0E+00

Where:
LADD = (EPC x SA x Kp x RAF x ED x EF x EP x UC)/(BW x APcancer)
ADD = (EPC x SA x Kp x RAF x ED x EF x EP x UC)/(BW x APnoncancer)

Constituent Specific (CS)

Exposure Point Concentration (EPC):	CS	mg/l
Skin surface area (SA):	3477	cm2 [1]
Permeability constant (Kp):	CS	cm/h
Exposure Duration (ED):	8	hours/event [2]
Exposure Frequency (EF):	0.36	events/d [2]
Exposure Period (EP):	182	days [1]
Units Conversion (UC):	0.001	l/cm3
Body Weight (BW):	58	kg [1]
Averaging Period (APcancer):	25550	days [1]
Averaging Period (APnoncancer):	182	days [1]

[1] MADEP, 2014
[2] Best Professional Judgement

Table 4
Utility Worker
Inhalation of Trench Air Exposure Pathway - Groundwater (Maximum Scenario)
Nemasket Street Lots
New Bedford, Massachusetts

		EPC	Estimated Dose		Toxicity Values		Risk Estimates	
	Constituent	Trench Air Concentration µg/m3	ADEcancer (Cancer) µg/m3	ADEnon-cancer (Non-cancer) µg/m3	Unit Risk µg/m3	Subchronic Noncancer Reference Concentration µg/m3	Cancer Risk (--)	Hazard Quotient (--)
VOCs								
127-18-4	Tetrachloroethene	4.5E-01	3.8E-04	5.4E-02	3.0E-06	4.0E+01	1.E-09	1.E-03
156-59-2	cis-1,2-Dichloroethene	1.3E-01	1.1E-04	1.6E-02	NA	6.0E+01	NA	3.E-04
79-01-6	Trichloroethene	9.2E-02	7.9E-05	1.1E-02	4.0E-06	2.0E+00	3.E-10	6.E-03

	Cancer Risk	Hazard Index
TOTAL:	1.5E-09	7.1E-03

Where:

LADEcancer = IAC x EFx ED x EP/APcancer
ADEnon-cancer = IAC x EF x ED x EP / APnon-cancer
Cancer Risk = LADEcancer x UR
Hazard Quotient = ADEnon-cancer / Inhalation Reference Concentration

Bold = Cancer Risk >1.0E-05 or Hazard Quotient > 1.0E+00

LADE = Life Time Average Daily Exposure
ADE = Average Daily Exposure
EPC = Exposure Point Concentration
µg/m^3 = micrograms per cubic meter

And where:

Exposure Frequency (EF) =	130	days/year (5 days a week for 26 weeks of exposure)
Exposure Duration (ED) =	8	hrs/day [1]
Exposure Period (EP) =	0.5	yr [1]
Unit Conversion (UC) =	0.042	days/hr
Averaging Period (APcancer) =	25550	days [1]
Averaging Period (APnon-cancer) =	182	days [1]

[1] MADEP, 2014

1-Day Utility Worker - Soil: Table CW-1 (Easement; 0-6' bgs)
Exposure Point Concentration (EPC) and Risk
Based on Construction Worker 18-25 years of age

ShortForm Version 10-12
Vlookup Version v0315

ELCR (all chemicals) = 3E-07
HI (all chemicals) = 5E-01

****Do not insert or delete any rows****
Click on empty cell below and select OHM using arrow.

Oil or Hazardous Material (OHM)	EPC (mg/kg)	ELCR ingestion	ELCR dermal	ELCR inhalation GI	ELCR inhalation pulmonary	$ELCR_{total}$	Subchronic HQ_{ing}	Subchronic HQ_{derm}	Subchronic HQ_{inh-GI}	Subchronic HQ_{inh}	HQ_{total}
AROMATICS C9 to C10 1,3,5-Trimethylbenzene	8.4E-03						6.9E-09	1.4E-08	1.8E-10	1.3E-10	2.1E-08
ALIPHATICS C9 to C12	2.1E+01						5.2E-06	1.1E-05	1.4E-07	2.6E-07	1.6E-05
AROMATICS C9 to C10	2.1E+01						1.7E-05	3.5E-05	4.5E-07	3.2E-07	5.3E-05
Ethylbenzene	1.9E+00						9.4E-06	2.8E-06	2.4E-07	1.6E-09	1.2E-05
Naphthalene	2.8E+00						1.0E-06	3.5E-06	2.7E-08	7.0E-06	1.2E-05
Toluene	7.5E-01						2.3E-07	7.0E-08	6.0E-09	1.1E-09	3.1E-07
XYLENES (Mixed Isomers)	9.9E+00						6.1E-06	1.8E-06	1.6E-07	1.8E-07	8.3E-06
ALIPHATICS C9 to C18	1.8E+01						4.4E-06	8.9E-06	1.1E-07	2.2E-07	1.4E-05
ALIPHATICS C19 to C36	3.9E+02						1.6E-05	3.3E-05	4.2E-07		4.9E-05
AROMATICS C11 to C22	6.9E+02						1.7E-04	5.7E-04	4.4E-06	1.0E-05	7.6E-04
Acenaphthene	1.6E+00						6.0E-07	2.0E-06	1.6E-08	2.4E-08	2.7E-06
Acenaphthylene	4.7E-01						1.2E-07	3.9E-07	3.0E-09	7.1E-09	5.2E-07
Anthracene	4.6E+00						3.4E-07	1.1E-06	8.9E-09	6.9E-08	1.6E-06
Benzo(a)anthracene	1.7E+01	6.5E-09	4.4E-09	1.7E-10	1.9E-10	1.1E-08	4.2E-06	2.8E-06	1.1E-07	2.5E-07	7.4E-06
Benzo(a)pyrene	1.3E+01	5.1E-08	3.4E-08	1.3E-09	1.5E-09	8.7E-08	3.2E-06	2.2E-06	8.4E-08	2.0E-07	5.7E-06
Benzo(b)fluoranthene	1.8E+01	6.8E-09	4.5E-09	1.8E-10	2.0E-10	1.2E-08	4.3E-06	2.9E-06	1.1E-07	2.6E-07	7.6E-06
Benzo(g,h,i)perylene	3.1E+00						7.5E-07	2.5E-06	2.0E-08	4.6E-08	3.3E-06
Benzo(k)fluoranthene	3.0E+00	1.1E-10	7.7E-11	3.0E-12	3.3E-12	2.0E-10	7.3E-07	4.9E-07	1.9E-08	4.4E-08	1.3E-06
Chrysene	7.6E+00	2.9E-10	2.0E-10	7.6E-12	8.4E-12	5.0E-10	1.9E-06	1.3E-06	4.8E-08	1.1E-07	3.3E-06
DIBENZO(a,h)ANTHRACENE	1.0E+00	3.9E-09	2.6E-09	1.0E-10	1.1E-10	6.8E-09	2.5E-07	1.7E-07	6.5E-09	1.5E-08	4.4E-07
Fluoranthene	1.6E+01						1.2E-05	4.0E-05	3.1E-07	2.4E-07	5.2E-05
Fluorene	2.7E+00						5.0E-07	1.7E-06	1.3E-08	4.0E-08	2.2E-06
Indeno(1,2,3-cd)pyrene	3.5E+00	1.3E-09	8.9E-10	3.4E-11	3.8E-11	2.3E-09	8.5E-07	5.7E-07	2.2E-08	5.2E-08	1.5E-06
METHYLNAPHTHALENE, 2-	1.1E+00						2.0E-05	6.8E-05	5.2E-07	1.6E-08	8.9E-05
Phenanthrene	1.8E+01						4.4E-06	1.5E-05	1.1E-07	2.7E-07	2.0E-05
Pyrene	1.4E+01						3.5E-06	1.2E-05	9.1E-08	2.1E-07	1.6E-05
POLYCHLORINATED BIPHENYLS (PCBs)	1.5E+01	5.4E-08	5.4E-08	1.4E-09	8.2E-11	1.1E-07	7.6E-02	7.6E-02	2.0E-03	5.7E-03	1.6E-01
Arsenic	1.5E+01	2.0E-08	1.2E-08	5.2E-10	2.4E-09	3.5E-08	6.3E-03	3.8E-03	1.6E-04	5.7E-03	1.6E-02
Barium	6.8E+02						2.4E-03	2.4E-03	6.2E-05	1.0E-03	5.9E-03
Beryllium	1.7E-01				2.1E-11	2.1E-11	8.1E-06	8.2E-06	2.1E-07	6.2E-05	7.8E-05
Cadmium	5.0E+00				4.8E-10	4.8E-10	1.2E-03	2.5E-04	3.2E-05	1.9E-03	3.4E-03
CHROMIUM(III)	8.7E+01						1.4E-05	1.4E-05	3.7E-07	2.2E-03	2.2E-03
Lead	1.4E+03						2.2E-01	2.7E-02	5.8E-03	1.0E-02	2.7E-01
Mercury	7.5E-01						3.1E-04	6.2E-04	7.9E-06	1.9E-05	9.5E-04
Nickel	2.3E+01				5.9E-10	5.9E-10	2.8E-04	5.7E-04	7.4E-06	1.7E-04	1.0E-03
Silver	7.2E-01						3.6E-05	1.1E-04	9.2E-07	3.8E-05	1.8E-04
Vanadium	5.1E+01						1.4E-03	1.4E-03	3.6E-05	3.8E-04	3.2E-03
Zinc	4.4E+02						3.6E-04	3.6E-04	9.3E-06	2.3E-03	3.0E-03

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Construction Worker - Soil: Table CW-2

Equations to Calculate Cancer Risk for Construction Worker

Vlookup Version v0315

Cancer Risk from Ingestion

$$ELCR_{ing} = LADD_{ing} * CSF_{oral}$$

$$LADD_{ing} = \frac{EPC * IR * RAF_{c\text{-}ing} * EF * ED_{ing} * EP * C1}{BW * AP_{lifetime}}$$

Cancer Risk from Dermal Absorption

$$ELCR_{derm} = LADD_{derm} * CSF_{oral}$$

$$LADD_{derm} = \frac{EPC * SA * AF * RAF_{c\text{-}derm} * EF * ED_{derm} * EP * C1}{BW * AP_{lifetime}}$$

Cancer Risk from Particulate Inhalation - Gastrointestinal Absorption

$$ELCR_{inh\text{-}GI} = LADD_{inh\text{-}GI} * CSF_{oral}$$

$$LADD_{inh\text{-}GI} = \frac{EPC * RCAF_{inh\text{-}gi} * PM_{10} * VR_{work} * RAF_{c\text{-}ing} * EF * ED_{inh} * EP * C2 * C3 * C4}{BW * AP_{lifetime}}$$

Cancer Risk from Particulate Inhalation - Pulmonary Absorption

$$ELCR_{inh} = LADD_{inh} * CSF_{inhalation}$$

$$LADD = \frac{EPC * RCAF_{inh} * PM_{10} * VR_{work} * RAF_{c\text{-}inh} * EF * ED_{inh} * EP * C2 * C3 * C4}{BW * AP_{lifetime}}$$

Parameter	Value	Units
CSF	OHM-specific	$(mg/kg\text{-}day)^{-1}$
LADD	age/OHM-specific	mg/kg-day
EPC	OHM-specific	mg/kg
IR	100	mg/day
$RAF_{c\text{-}ing}$	OHM-specific	dimensionless
$RAF_{c\text{-}derm}$	OHM-specific	dimensionless
$RAF_{c\text{-}inh}$	OHM-specific	dimensionless
EF	0.143	event/day
$ED_{ing\ \&\ derm}$	1	day/event
ED_{inh}	0.333	day/event
EP	182	days
C1	1.0E-06	kg/mg
C2	1.0E-09	kg/µg
C3	1440	min/days
C4	1.0E-03	m^3/L
BW	58.0	kg
$AP_{(lifetime)}$	25,550	days
VR_{work}	60	L/min
AF	0.29	mg/cm^2
SA	3473	cm^2/day
$RCAF_{inh\text{-}gi}$	1.5	dimensionless
$RCAF_{inh}$	0.5	dimensionless
PM_{10}	60	$\mu g/m^3$

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Construction Worker - Soil: Table CW-3

Equations to Calculate Noncancer Risk for Construction Worker

Vlookup Version v0315

Noncancer Risk from Ingestion

$$HQ_{ing} = \frac{ADD_{ing}}{RfD_{oral\text{-}subchronic}}$$

$$ADD_{ing} = \frac{EPC * IR * RAF_{nc\text{-}ing} * EF * ED_{ing} * EP * C1}{BW * AP_{noncancer}}$$

Noncancer Risk from Dermal Absorption

$$HQ_{derm} = \frac{ADD_{derm}}{RfD_{oral\text{-}subchronic}}$$

$$ADD_{dermal} = \frac{EPC * SA * AF * RAF_{nc\text{-}derm} * EF * ED_{dermal} * EP * C1}{BW * AP_{noncancer}}$$

Noncancer Risk from Particulate Inhalation - Gastrointestinal Absorption

$$HQ_{inh\text{-}GI} = \frac{ADD_{inh\text{-}GI}}{RfD_{oral\text{-}subchronic}}$$

$$ADD_{inh\text{-}GI} = \frac{EPC * RCAF_{inh\text{-}gi} * PM_{10} * VR_{work} * RAF_{nc\text{-}ing} * EF * ED_{inh} * EP * C2 * C3 * C4}{BW * AP_{noncancer}}$$

Noncancer Risk from Particulate Inhalation - Pulmonary Absorption

$$HQ_{inh} = \frac{ADD}{RfD_{inhalation\text{-}subchronic}}$$

$$ADD_{inh} = \frac{EPC_{soil} * RCAF_{inh} * PM_{10} * VR_{work} * RAF_{nc\text{-}inh} * EF * ED_{inh} * EP * C2 * C3 * C4}{BW * AP_{noncancer}}$$

Parameter	Value	Units
RfD	OHM-specific	mg/kg-day
ADD	OHM-specific	mg/kg-day
EPC	OHM-specific	mg/kg
IR	100	mg/day
$RAF_{nc\text{-}ing}$	OHM-specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM-specific	dimensionless
$RAF_{nc\text{-}inh}$	OHM-specific	dimensionless
EF	0.143	event/day
$ED_{ing\ \&\ derm}$	1	day/event
ED_{inh}	0.333	day/event
EP	182	days
C1	1.0E-06	kg/mg
C2	1.0E-09	kg/µg
C3	1440	min/days
C4	1.0E-03	m^3/L
BW	58.0	kg
$AP_{noncancer}$	182	days
VR_{work}	60	L/min
AF	0.29	mg/cm^2
SA	3473	cm^2/day
$RCAF_{inh\text{-}gi}$	1.5	dimensionless
$RCAF_{inh}$	0.5	dimensionless
PM10	60	$\mu g/m^3$

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Construction Worker - Soil: Table CW-4
Definitions and Exposure Factors

Vlookup Version v0315

Parameter	Value	Units	Notes
ELCR - Excess Lifetime Cancer Risk	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
HI - Hazard Index	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
CSF - Cancer Slope Factor	chemical specific	$(mg/kg\text{-}day)^{-1}$	see Table CW-5.
RfD - Reference Dose	chemical specific	mg/kg-day	see Table CW-5.
LADD - Lifetime Average Daily Dose	chemical specific	mg/kg-day	Pathway specific. See Table CW-2.
ADD - Average Daily Dose	chemical specific	mg/kg-day	Pathway specific. See Table CW-3.
EPC - Exposure Point Concentration	chemical specific	mg/kg	see Table CW-1.
IR - Soil Ingestion Rate	100	mg/day	MADEP. 2002. Technical Update: Calculation of an Enhanced Soil Ingestion Rate. (http://www.mass.gov/dep/ors/orspubs.htm).
RAF_c - Relative Absorption Factor for Cancer Effects	chemical specific	dimensionless	Pathway specific - see Table CW-5.
RAF_{nc} - Relative Absorption Factor for Noncancer Effects	chemical specific	dimensionless	Pathway specific - see Table CW-5.
EF - Exposure Frequency	0.143	event/day	1 events (days) / 7 events (days) in a week; MADEP 1995 Guidance for Disposal Site Risk Characterization pg B-38.
$ED_{ing,derm}$ - Exposure Duration for ingestion or dermal exposure	1	day/event	
ED_{inh} - Exposure Duration for inhalation exposure	0.333	day/event	Represents 8 hours / event.
EP - Exposure Period	182	days	6 months; MADEP 1995 Guidance for Disposal Site Risk Characterization.
BW - Body Weight	58.0	kg	U.S. EPA. 1997. Exposure Factors Handbook. Table 7-7, Females, ages 18 - 25.
$AP_{(lifetime)}$ - Averaging Period for lifetime	25,550	days	Represents 70 years
$AP_{(noncancer)}$ - Averaging Period for noncancer	182	days	6 months; MADEP 1995 Guidance for Disposal Site Risk Characterization.
AF - Adherence Factor	0.29	mg/cm^2	MA DEP. 2002 Technical Update: Weighted Skin-Soil Adherence Factors. (http://www.mass.gov/dep/ors/orspubs.htm)
VR_{work} - Ventilation Rate during work (heavy exertion)	60	L/min	Table B-4 MADEP 1995 Guidance for Disposal Site Risk Characterization.
SA - Surface Area	3473	cm^2/day	MADEP. 1995. Guidance for Disposal Site Risk Characterization. 50th percentile for females. Appendix Table B-2.
$IFAF_{inh\text{-}gi}$ - Ingestion Fraction Adjustment Factor, gastrointestinal	1.5	dimensionless	MADEP 2007. Characterization of Risks Due to Inhalation of Particulates by Construction Workers
$IFAF_{inh}$ - Inhalation Fraction Adjustment Factor, inhalation	0.5	dimensionless	MADEP 2002. Characterization of Risks Due to Inhalation of Particulates by Construction Workers
PM10 - Concentration of PM_{10}	60	$\mu g/m^3$	MADEP 1995 Guidance for Disposal Site Risk Characterization pg B-11

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Construction Worker - Soil: Table CW-5
Chemical-Specific Data

Vlookup Version v0315

Oil or Hazardous Material	Oral CSF $(mg/kg\text{-}day)^{-1}$	$RAF_{c\text{-}ing}$	$RAF_{c\text{-}derm}$	$RAF_{c\text{-}inh}$	Inhalation CSF $(mg/kg\text{-}day)^{-1}$	Subchronic Oral RfD mg/kg-day	Subchronic $RAF_{nc\text{-}ing}$	Subchronic $RAF_{nc\text{-}derm}$	Subchronic $RAF_{nc\text{-}inh}$	Subchronic Inhalation RfD
AROMATICS C9 to C10						3.0E-01	1	0.2	1	1.4E-01
ALIPHATICS C9 to C12						1.0E+00	1	0.2	1	1.7E-01
AROMATICS C9 to C10						3.0E-01	1	0.2	1	1.4E-01
Ethylbenzene						5.0E-02	1	0.03	1	2.6E+00
Naphthalene						2.0E-01	0.3	0.1	1	8.6E-04
Toluene						8.0E-01	1	0.03	1	1.4E+00
XYLENES (Mixed Isomers)						4.0E-01	1	0.03	1	1.1E-01
ALIPHATICS C9 to C18						1.0E+00	1	0.2	1	1.7E-01
ALIPHATICS C19 to C36						6.0E+00	1	0.2		
AROMATICS C11 to C22						3.0E-01	0.3	0.1	1	1.4E-01
Acenaphthene						2.0E-01	0.3	0.1	1	1.4E-01
Acenaphthylene						3.0E-01	0.3	0.1	1	1.4E-01
Anthracene						1.0E+00	0.3	0.1	1	1.4E-01
Benzo(a)anthracene	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
Benzo(a)pyrene	7.3E+00	0.3	0.02	1	7.3E+00	3.0E-01	0.3	0.02	1	1.4E-01
Benzo(b)fluoranthene	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
Benzo(g,h,i)perylene						3.0E-01	0.3	0.1	1	1.4E-01
Benzo(k)fluoranthene	7.3E-02	0.3	0.02	1	7.3E-02	3.0E-01	0.3	0.02	1	1.4E-01
Chrysene	7.3E-02	0.3	0.02	1	7.3E-02	3.0E-01	0.3	0.02	1	1.4E-01
DIBENZO(a,h)ANTHRACENE	7.3E+00	0.3	0.02	1	7.3E+00	3.0E-01	0.3	0.02	1	1.4E-01
Fluoranthene						1.0E-01	0.3	0.1	1	1.4E-01
Fluorene						4.0E-01	0.3	0.1	1	1.4E-01
Indeno(1,2,3-cd)pyrene	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
METHYLNAPHTHALENE, 2-						4.0E-03	0.3	0.1	1	1.4E-01
Phenanthrene						3.0E-01	0.3	0.1	1	1.4E-01
Pyrene						3.0E-01	0.3	0.1	1	1.4E-01
POLYCHLORINATED BIPHENYLS (PCBs)	2.0E+00	1	0.1	1	3.5E-01	5.0E-05	1	0.1	1	5.7E-06
Arsenic	1.5E+00	0.5	0.03	1	1.1E+01	3.0E-04	0.5	0.03	1	5.7E-06
Barium						7.0E-02	1	0.1	1	1.4E-03
Beryllium					8.4E+00	5.0E-03	1	0.1	1	5.7E-06
Cadmium					6.3E+00	5.0E-04	0.5	0.01	1	5.7E-06
CHROMIUM(III)						1.5E+00	1	0.1	1	8.6E-05
Lead						7.5E-04	0.5	0.006	1	2.9E-04
Mercury						3.0E-04	0.5	0.1	1	8.6E-05
Nickel					1.7E+00	2.0E-02	1	0.2	1	2.9E-04
Silver						5.0E-03	1	0.3	1	4.0E-05
Vanadium						9.0E-03	1	0.1	1	2.9E-04
Zinc						3.0E-01	1	0.1	1	4.0E-04

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Construction Worker - Soil: Table CW-6
Cyanide Calculations

The soil cyanide concentration limit set to protect a construction worker against an acute, potentially lethal one-time dose of cyanide from incidental ingestion of contaminated soil is 12,000 mg/kg_{soil}. This is the concentration of available cyanide in soil below which acute human health effects would not be expected following a one-time exposure. This soil concentration is calculated using the equation below with a one-time soil ingestion estimate of 50 mg_{soil} and an available cyanide dose limit of 0.01 $mg/kg_{body\ weight}$.

MassDEP's guidance on evaluating the risk from a one-time cyanide dose considers cyanide's potentially lethal effects as well as information on cyanide metabolism:

> Cyanides are detoxified rapidly by the body, and a large acute dose which overwhelms the detoxification mechanism is potentially more toxic than the same dose distributed over a period of hours. (MassDEP *Background Documentation for the Development of an Available Cyanide Benchmark Concentration,* originally dated October 1992, Modified August 1998)

Assessment of a potential one-time dose requires an estimate of the maximum soil concentration the trespasser could contact at any one time. The average soil concentration within a typical exposure area will underestimate the potential one-time dose. Therefore, to assess the acute risk of a one-time potentially lethal dose, the EPC for cyanide should be a conservative estimate of the maximum concentration.

The construction worker soil concentration limit to protect against adverse effects from an acute (one-time) exposure to cyanide is 12,000 mg/kg.

Acute Concentration Calculation for Cyanide

$$\text{Concentration} = \frac{\text{HQ x Acute Dose Limit x BW}}{\text{IR x RAF x Conversion Factor}}$$

Parameter	Value	Units
HQ (Hazard Quotient)	1	(unitless)
Acute Dose Limit	0.01	mg avail. CN/ kg BW
BW (Body Weight) 11-12	58	kg
IR (1-time reasonable max)	50	mg
Conversion Factor	1.0E-06	kg soil / mg soil
RAF	1	(unitless)

The toxicological basis for estimating an allowable one-time dose is documented in MassDEP's 1992 *Background Documentation for the Development of an "Available Cyanide" Benchmark Concentration,* which is published at: http://www.mass.gov/eea/docs/dep/toxics/stypes/dscyanide.pdf

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1-Day Utility Worker - Soil: Table CW-1 (Easement; 0-15' bgs)
Exposure Point Concentration (EPC) and Risk
Based on Construction Worker 18-25 years of age

ShortForm Version 10-12
Vlookup Version v0315

ELCR (all chemicals) = 3E-07
HI (all chemicals) = 5E-01

****Do not insert or delete any rows****
Click on empty cell below and select OHM using arrow.

Oil or Hazardous Material (OHM)	EPC (mg/kg)	ELCR ingestion	ELCR dermal	ELCR inhalation GI	ELCR inhalation pulmonary	$ELCR_{total}$	Subchronic HQ_{ing}	Subchronic HQ_{derm}	Subchronic HQ_{inh-GI}	Subchronic HQ_{inh}	HQ_{total}
AROMATICS C9 to C10 1,3,5-Trimethylbenzene	8.4E-03						6.9E-09	1.4E-08	1.8E-10	1.3E-10	2.1E-08
ALIPHATICS C9 to C12	2.1E+01						5.2E-06	1.1E-05	1.4E-07	2.6E-07	1.6E-05
AROMATICS C9 to C10	2.1E+01						1.7E-05	3.5E-05	4.5E-07	3.2E-07	5.3E-05
Ethylbenzene	1.9E+00						9.4E-06	2.8E-06	2.4E-07	1.6E-09	1.2E-05
Naphthalene	2.4E+00						8.9E-07	3.0E-06	2.3E-08	6.0E-06	9.9E-06
Toluene	7.5E-01						2.3E-07	7.0E-08	6.0E-09	1.1E-09	3.1E-07
XYLENES (Mixed Isomers)	9.9E+00						6.1E-06	1.8E-06	1.6E-07	1.8E-07	8.3E-06
ALIPHATICS C9 to C18	1.8E+01						4.4E-06	8.9E-06	1.1E-07	2.2E-07	1.4E-05
ALIPHATICS C19 to C36	3.9E+02						1.6E-05	3.3E-05	4.2E-07		4.9E-05
AROMATICS C11 to C22	6.9E+02						1.7E-04	5.7E-04	4.4E-06	1.0E-05	7.6E-04
Acenaphthene	1.4E+00						5.2E-07	1.8E-06	1.4E-08	2.1E-08	2.3E-06
Acenaphthylene	4.4E-01						1.1E-07	3.6E-07	2.8E-09	6.6E-09	4.8E-07
Anthracene	4.0E+00						2.9E-07	9.8E-07	7.6E-09	5.9E-08	1.3E-06
Benzo(a)anthracene	6.2E+00	2.4E-09	1.6E-09	6.2E-11	6.9E-11	4.1E-09	1.5E-06	1.0E-06	4.0E-08	9.3E-08	2.7E-06
Benzo(a)pyrene	1.1E+01	4.4E-08	2.9E-08	1.1E-09	1.3E-09	7.6E-08	2.8E-06	1.9E-06	7.3E-08	1.7E-07	4.9E-06
Benzo(b)fluoranthene	6.6E+00	2.5E-09	1.7E-09	6.6E-11	7.3E-11	4.4E-09	1.6E-06	1.1E-06	4.2E-08	9.8E-08	2.8E-06
Benzo(g,h,i)perylene	2.6E+00						6.5E-07	2.2E-06	1.7E-08	3.9E-08	2.9E-06
Benzo(k)fluoranthene	2.6E+00	9.8E-11	6.6E-11	2.5E-12	2.8E-12	1.7E-10	6.3E-07	4.2E-07	1.6E-08	3.8E-08	1.1E-06
Chrysene	6.5E+00	2.5E-10	1.7E-10	6.4E-12	7.2E-12	4.3E-10	1.6E-06	1.1E-06	4.1E-08	9.6E-08	2.8E-06
DIBENZO(a,h)ANTHRACENE	9.0E-01	3.5E-09	2.3E-09	9.0E-11	1.0E-10	6.0E-09	2.2E-07	1.5E-07	5.8E-09	1.3E-08	3.9E-07
Fluoranthene	1.4E+01						1.0E-05	3.4E-05	2.6E-07	2.0E-07	4.4E-05
Fluorene	2.3E+00						4.3E-07	1.4E-06	1.1E-08	3.5E-08	1.9E-06
Indeno(1,2,3-cd)pyrene	3.0E+00	1.1E-09	7.7E-10	3.0E-11	3.3E-11	2.0E-09	7.3E-07	4.9E-07	1.9E-08	4.4E-08	1.3E-06
METHYLNAPHTHALENE, 2-	9.7E-01						1.8E-05	6.0E-05	4.6E-07	1.4E-08	7.8E-05
Phenanthrene	1.5E+01						3.7E-06	1.3E-05	9.7E-08	2.3E-07	1.7E-05
Pyrene	1.2E+01						3.0E-06	1.0E-05	7.7E-08	1.8E-07	1.3E-05
POLYCHLORINATED BIPHENYLS (PCBs)	2.0E+01	7.0E-08	7.1E-08	1.8E-09	1.1E-10	1.4E-07	9.9E-02	9.9E-02	2.6E-03	7.4E-03	2.1E-01
Arsenic	1.4E+01	1.9E-08	1.1E-08	4.8E-10	2.3E-09	3.3E-08	5.8E-03	3.5E-03	1.5E-04	5.3E-03	1.5E-02
Barium	6.2E+02						2.2E-03	2.2E-03	5.7E-05	9.3E-04	5.4E-03
Beryllium	2.1E-01				2.6E-11	2.6E-11	1.0E-05	1.0E-05	2.6E-07	7.6E-05	9.7E-05
Cadmium	4.6E+00				4.3E-10	4.3E-10	1.1E-03	2.3E-04	2.9E-05	1.7E-03	3.1E-03
CHROMIUM(III)	8.0E+01						1.3E-05	1.3E-05	3.4E-07	2.0E-03	2.0E-03
Lead	1.2E+03						2.0E-01	2.5E-02	5.3E-03	9.3E-03	2.4E-01
Mercury	6.8E-01						2.8E-04	5.6E-04	7.2E-06	1.7E-05	8.6E-04
Nickel	2.1E+01				5.2E-10	5.2E-10	2.5E-04	5.1E-04	6.6E-06	1.5E-04	9.2E-04
Silver	7.2E-01						3.6E-05	1.1E-04	9.2E-07	3.9E-05	1.8E-04
Vanadium	4.4E+01						1.2E-03	1.2E-03	3.1E-05	3.3E-04	2.8E-03
Zinc	3.7E+02						3.0E-04	3.1E-04	7.9E-06	2.0E-03	2.6E-03

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Construction Worker - Soil: Table CW-2

Equations to Calculate Cancer Risk for Construction Worker

Vlookup Version v0315

Cancer Risk from Ingestion

$$ELCR_{ing} = LADD_{ing} * CSF_{oral}$$

$$LADD_{ing} = \frac{EPC * IR * RAF_{c\text{-}ing} * EF * ED_{ing} * EP * C1}{BW * AP_{lifetime}}$$

Cancer Risk from Dermal Absorption

$$ELCR_{derm} = LADD_{derm} * CSF_{oral}$$

$$LADD_{derm} = \frac{EPC * SA * AF * RAF_{c\text{-}derm} * EF * ED_{derm} * EP * C1}{BW * AP_{lifetime}}$$

Cancer Risk from Particulate Inhalation - Gastrointestinal Absorption

$$ELCR_{inh\text{-}GI} = LADD_{inh\text{-}GI} * CSF_{oral}$$

$$LADD_{inh\text{-}GI} = \frac{EPC * RCAF_{inh\text{-}gi} * PM_{10} * VR_{work} * RAF_{c\text{-}ing} * EF * ED_{inh} * EP * C2 * C3 * C4}{BW * AP_{lifetime}}$$

Cancer Risk from Particulate Inhalation - Pulmonary Absorption

$$ELCR_{inh} = LADD_{inh} * CSF_{inhalation}$$

$$LADD = \frac{EPC * RCAF_{inh} * PM_{10} * VR_{work} * RAF_{c\text{-}inh} * EF * ED_{inh} * EP * C2 * C3 * C4}{BW * AP_{lifetime}}$$

Parameter	Value	Units
CSF	OHM-specific	$(mg/kg\text{-}day)^{-1}$
LADD	age/OHM-specific	mg/kg-day
EPC	OHM-specific	mg/kg
IR	100	mg/day
$RAF_{c\text{-}ing}$	OHM-specific	dimensionless
$RAF_{c\text{-}derm}$	OHM-specific	dimensionless
$RAF_{c\text{-}inh}$	OHM-specific	dimensionless
EF	0.143	event/day
$ED_{ing\ \&\ derm}$	1	day/event
ED_{inh}	0.333	day/event
EP	182	days
C1	1.0E-06	kg/mg
C2	1.0E-09	kg/µg
C3	1440	min/days
C4	1.0E-03	m^3/L
BW	58.0	kg
$AP_{(lifetime)}$	25,550	days
VR_{work}	60	L/min
AF	0.29	mg/cm^2
SA	3473	cm^2/day
$RCAF_{inh\text{-}gi}$	1.5	dimensionless
$RCAF_{inh}$	0.5	dimensionless
PM_{10}	60	$\mu g/m^3$

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Construction Worker - Soil: Table CW-3

Equations to Calculate Noncancer Risk for Construction Worker

Vlookup Version v0315

Noncancer Risk from Ingestion

$$HQ_{ing} = \frac{ADD_{ing}}{RfD_{oral\text{-}subchronic}}$$

$$ADD_{ing} = \frac{EPC * IR * RAF_{nc\text{-}ing} * EF * ED_{ing} * EP * C1}{BW * AP_{noncancer}}$$

Noncancer Risk from Dermal Absorption

$$HQ_{derm} = \frac{ADD_{derm}}{RfD_{oral\text{-}subchronic}}$$

$$ADD_{dermal} = \frac{EPC * SA * AF * RAF_{nc\text{-}derm} * EF * ED_{dermal} * EP * C1}{BW * AP_{noncancer}}$$

Noncancer Risk from Particulate Inhalation - Gastrointestinal Absorption

$$HQ_{inh\text{-}GI} = \frac{ADD_{inh\text{-}GI}}{RfD_{oral\text{-}subchronic}}$$

$$ADD_{inh\text{-}GI} = \frac{EPC * RCAF_{inh\text{-}gi} * PM_{10} * VR_{work} * RAF_{nc\text{-}ing} * EF * ED_{inh} * EP * C2 * C3 * C4}{BW * AP_{noncancer}}$$

Noncancer Risk from Particulate Inhalation - Pulmonary Absorption

$$HQ_{inh} = \frac{ADD}{RfD_{inhalation\text{-}subchronic}}$$

$$ADD_{inh} = \frac{EPC_{soil} * RCAF_{inh} * PM_{10} * VR_{work} * RAF_{nc\text{-}inh} * EF * ED_{inh} * EP * C2 * C3 * C4}{BW * AP_{noncancer}}$$

Parameter	Value	Units
RfD	OHM-specific	mg/kg-day
ADD	OHM-specific	mg/kg-day
EPC	OHM-specific	mg/kg
IR	100	mg/day
$RAF_{nc\text{-}ing}$	OHM-specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM-specific	dimensionless
$RAF_{nc\text{-}inh}$	OHM-specific	dimensionless
EF	0.143	event/day
$ED_{ing\ \&\ derm}$	1	day/event
ED_{inh}	0.333	day/event
EP	182	days
C1	1.0E-06	kg/mg
C2	1.0E-09	kg/µg
C3	1440	min/days
C4	1.0E-03	m^3/L
BW	58.0	kg
$AP_{noncancer}$	182	days
VR_{work}	60	L/min
AF	0.29	mg/cm^2
SA	3473	cm^2/day
$RCAF_{inh\text{-}gi}$	1.5	dimensionless
$RCAF_{inh}$	0.5	dimensionless
PM10	60	$µg/m^3$

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Construction Worker - Soil: Table CW-4
Definitions and Exposure Factors

Vlookup Version v0315

Parameter	Value	Units	Notes
ELCR - Excess Lifetime Cancer Risk	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
HI - Hazard Index	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
CSF - Cancer Slope Factor	chemical specific	$(mg/kg\text{-}day)^{-1}$	see Table CW-5.
RfD - Reference Dose	chemical specific	mg/kg-day	see Table CW-5.
LADD - Lifetime Average Daily Dose	chemical specific	mg/kg-day	Pathway specific. See Table CW-2.
ADD - Average Daily Dose	chemical specific	mg/kg-day	Pathway specific. See Table CW-3.
EPC - Exposure Point Concentration	chemical specific	mg/kg	see Table CW-1.
IR - Soil Ingestion Rate	100	mg/day	MADEP. 2002. Technical Update: Calculation of an Enhanced Soil Ingestion Rate. (http://www.mass.gov/dep/ors/orspubs.htm).
RAF_c - Relative Absorption Factor for Cancer Effects	chemical specific	dimensionless	Pathway specific - see Table CW-5.
RAF_{nc} - Relative Absorption Factor for Noncancer Effects	chemical specific	dimensionless	Pathway specific - see Table CW-5.
EF - Exposure Frequency	0.143	event/day	1 events (days) / 7 events (days) in a week; MADEP 1995 Guidance for Disposal Site Risk Characterization pg B-38.
$ED_{ing,derm}$ - Exposure Duration for ingestion or dermal exposure	1	day/event	
ED_{inh} - Exposure Duration for inhalation exposure	0.333	day/event	Represents 8 hours / event.
EP - Exposure Period	182	days	6 months; MADEP 1995 Guidance for Disposal Site Risk Characterization.
BW - Body Weight	58.0	kg	U.S. EPA. 1997. Exposure Factors Handbook. Table 7-7, Females, ages 18 - 25.
$AP_{(lifetime)}$ - Averaging Period for lifetime	25,550	days	Represents 70 years
$AP_{(noncancer)}$ - Averaging Period for noncancer	182	days	6 months; MADEP 1995 Guidance for Disposal Site Risk Characterization.
AF - Adherence Factor	0.29	mg/cm^2	MA DEP. 2002 Technical Update: Weighted Skin-Soil Adherence Factors. (http://www.mass.gov/dep/ors/orspubs.htm)
VR_{work} - Ventilation Rate during work (heavy exertion)	60	L/min	Table B-4 MADEP 1995 Guidance for Disposal Site Risk Characterization.
SA - Surface Area	3473	cm^2/day	MADEP. 1995. Guidance for Disposal Site Risk Characterization. 50th percentile for females. Appendix Table B-2.
$IFAF_{inh\text{-}gi}$ - Ingestion Fraction Adjustment Factor, gastrointestinal	1.5	dimensionless	MADEP 2007. Characterization of Risks Due to Inhalation of Particulates by Construction Workers
$IFAF_{inh}$ - Inhalation Fraction Adjustment Factor, inhalation	0.5	dimensionless	MADEP 2002. Characterization of Risks Due to Inhalation of Particulates by Construction Workers
PM10 - Concentration of PM_{10}	60	$\mu g/m^3$	MADEP 1995 Guidance for Disposal Site Risk Characterization pg B-11

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Construction Worker - Soil: Table CW-5
Chemical-Specific Data

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Oil or Hazardous Material	Oral CSF $(mg/kg\text{-}day)^{-1}$	$RAF_{c\text{-}ing}$	$RAF_{c\text{-}derm}$	$RAF_{c\text{-}inh}$	Inhalation CSF $(mg/kg\text{-}day)^{-1}$	Subchronic Oral RfD mg/kg-day	Subchronic $RAF_{nc\text{-}ing}$	Subchronic $RAF_{nc\text{-}derm}$	Subchronic $RAF_{nc\text{-}inh}$	Subchronic Inhalation RfD
AROMATICS C9 to C10						3.0E-01	1	0.2	1	1.4E-01
ALIPHATICS C9 to C12						1.0E+00	1	0.2	1	1.7E-01
AROMATICS C9 to C10						3.0E-01	1	0.2	1	1.4E-01
Ethylbenzene						5.0E-02	1	0.03	1	2.6E+00
Naphthalene						2.0E-01	0.3	0.1	1	8.6E-04
Toluene						8.0E-01	1	0.03	1	1.4E+00
XYLENES (Mixed Isomers)						4.0E-01	1	0.03	1	1.1E-01
ALIPHATICS C9 to C18						1.0E+00	1	0.2	1	1.7E-01
ALIPHATICS C19 to C36						6.0E+00	1	0.2		
AROMATICS C11 to C22						3.0E-01	0.3	0.1	1	1.4E-01
Acenaphthene						2.0E-01	0.3	0.1	1	1.4E-01
Acenaphthylene						3.0E-01	0.3	0.1	1	1.4E-01
Anthracene						1.0E+00	0.3	0.1	1	1.4E-01
Benzo(a)anthracene	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
Benzo(a)pyrene	7.3E+00	0.3	0.02	1	7.3E+00	3.0E-01	0.3	0.02	1	1.4E-01
Benzo(b)fluoranthene	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
Benzo(g,h,i)perylene						3.0E-01	0.3	0.1	1	1.4E-01
Benzo(k)fluoranthene	7.3E-02	0.3	0.02	1	7.3E-02	3.0E-01	0.3	0.02	1	1.4E-01
Chrysene	7.3E-02	0.3	0.02	1	7.3E-02	3.0E-01	0.3	0.02	1	1.4E-01
DIBENZO(a,h)ANTHRACENE	7.3E+00	0.3	0.02	1	7.3E+00	3.0E-01	0.3	0.02	1	1.4E-01
Fluoranthene						1.0E-01	0.3	0.1	1	1.4E-01
Fluorene						4.0E-01	0.3	0.1	1	1.4E-01
Indeno(1,2,3-cd)pyrene	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
METHYLNAPHTHALENE, 2-						4.0E-03	0.3	0.1	1	1.4E-01
Phenanthrene						3.0E-01	0.3	0.1	1	1.4E-01
Pyrene						3.0E-01	0.3	0.1	1	1.4E-01
POLYCHLORINATED BIPHENYLS (PCBs)	2.0E+00	1	0.1	1	3.5E-01	5.0E-05	1	0.1	1	5.7E-06
Arsenic	1.5E+00	0.5	0.03	1	1.1E+01	3.0E-04	0.5	0.03	1	5.7E-06
Barium						7.0E-02	1	0.1	1	1.4E-03
Beryllium					8.4E+00	5.0E-03	1	0.1	1	5.7E-06
Cadmium					6.3E+00	5.0E-04	0.5	0.01	1	5.7E-06
CHROMIUM(III)						1.5E+00	1	0.1	1	8.6E-05
Lead						7.5E-04	0.5	0.006	1	2.9E-04
Mercury						3.0E-04	0.5	0.1	1	8.6E-05
Nickel					1.7E+00	2.0E-02	1	0.2	1	2.9E-04
Silver						5.0E-03	1	0.3	1	4.0E-05
Vanadium						9.0E-03	1	0.1	1	2.9E-04
Zinc						3.0E-01	1	0.1	1	4.0E-04

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Construction Worker - Soil: Table CW-6
Cyanide Calculations

The soil cyanide concentration limit set to protect a construction worker against an acute, potentially lethal one-time dose of cyanide from incidental ingestion of contaminated soil is 12,000 mg/kg_{soil}. This is the concentration of available cyanide in soil below which acute human health effects would not be expected following a one-time exposure. This soil concentration is calculated using the equation below with a one-time soil ingestion estimate of 50 mg_{soil} and an available cyanide dose limit of 0.01 $mg/kg_{body\ weight}$.

MassDEP's guidance on evaluating the risk from a one-time cyanide dose considers cyanide's potentially lethal effects as well as information on cyanide metabolism:

> Cyanides are detoxified rapidly by the body, and a large acute dose which overwhelms the detoxification mechanism is potentially more toxic than the same dose distributed over a period of hours. (MassDEP *Background Documentation for the Development of an Available Cyanide Benchmark Concentration,* originally dated October 1992, Modified August 1998)

Assessment of a potential one-time dose requires an estimate of the maximum soil concentration the trespasser could contact at any one time. The average soil concentration within a typical exposure area will underestimate the potential one-time dose. Therefore, to assess the acute risk of a one-time potentially lethal dose, the EPC for cyanide should be a conservative estimate of the maximum concentration.

The construction worker soil concentration limit to protect against adverse effects from an acute (one-time) exposure to cyanide is 12,000 mg/kg.

Acute Concentration Calculation for Cyanide

$$\text{Concentration} = \frac{\text{HQ x Acute Dose Limit x BW}}{\text{IR x RAF x Conversion Factor}}$$

Parameter	Value	Units
HQ (Hazard Quotient)	1	(unitless)
Acute Dose Limit	0.01	mg avail. CN/ kg BW
BW (Body Weight) 11-12	58	kg
IR (1-time reasonable max)	50	mg
Conversion Factor	1.0E-06	kg soil / mg soil
RAF	1	(unitless)

The toxicological basis for estimating an allowable one-time dose is documented in MassDEP's 1992 *Background Documentation for the Development of an "Available Cyanide" Benchmark Concentration,* which is published at: http://www.mass.gov/eea/docs/dep/toxics/stypes/dscyanide.pdf

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ATTACHMENT 5

COMPARISON OF NEMASKET STREET LOTS AND KEITH MIDDLE SCHOOL SOIL DATA TO MCP UCLs

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				IW-1	IW-2	RS-1	RS-2	RS-3	RS-4	Bethel-2			Bethel-3				NM-ROW-1		
		Sample Depth (ft.):				0-0.5	0-0.5	1-4	0.5-4	0.5-4	0.5-4	0.5-3	3-7	7-10	0-1	0.5-3	0-1	1-3	0-1	1-3	5-7
		Sample Date:				12/23/2004	12/23/2004	10/22/2004	10/22/2004	10/22/2004	10/22/2004 combo	8/23/2005	8/23/2005 combo	8/23/2005	9/8/2005	8/23/2005	06/10/2011	06/10/2011	3/24/2011	3/24/2011	3/24/2011 combo
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																
VOCs																					
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10	30	10	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																					
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	40	500	40	1,000	0.088 U	0.11 U	NA	NA	NA	NA	**12**	**7.0**	NA	NA	**1.0**	NA	NA	0.19 U	0.38 U	0.22 U
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	300	500	300	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																					
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																					
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	**0.26 J**	8.45 U	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	2.05 U	NA	NA	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**6.0**	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.067**	NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3.4**	NA	NA	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	**14**	**9.7**	NA	NA	**1.0**	NA	NA	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	**0.11**	**0.14**	NA	NA	NA	NA	**28**	**18**	NA	NA	**1.4**	NA	NA	0.19 U	0.38 U	0.22 U
	Acenaphthylene	600	10	600	10	0.088 U	0.11 U	NA	NA	NA	NA	NA	**1.4**	**13**	NA	**0.091**	NA	NA	0.19 U	0.38 U	0.22 U
	Anthracene	1,000	1,000	3,000	3,000	**0.25**	**0.44**	NA	NA	NA	NA	**50**	**28**	**18**	NA	**3.4**	NA	NA	0.19 U	**0.98**	0.22 U
	Benzo(a)anthracene	7	7	40	40	**0.92**	**1.4**	NA	NA	NA	NA	**120**	**68**	**50**	NA	**7.6**	NA	NA	0.19 U	**3.1**	**0.83**
	Benzo(a)pyrene	2	2	4	4	**0.93**	**1.4**	NA	NA	NA	NA	**93**	**55**	**33**	NA	**5.0**	NA	NA	0.19 U	**2.9**	**1.2**
	Benzo(b)fluoranthene	7	7	40	40	**1.4**	**2.3**	NA	NA	NA	NA	**130**	**91**	**40**	NA	**9.8**	NA	NA	0.19 U	**3.5**	**1.9**
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**0.49**	**0.82**	NA	NA	NA	NA	**39**	**30**	NA	NA	**3.0**	NA	NA	0.19 U	**1.6**	**0.58**
	Benzo(k)fluoranthene	70	70	400	400	**0.45**	**0.56**	NA	NA	NA	NA	**39**	**28**	NA	NA	**2.3**	NA	NA	0.19 U	**1.5**	**0.4025 J**
	Chrysene	70	70	400	400	**8.8**	**1.0**	NA	NA	NA	NA	**98**	**54**	**49**	NA	**6.1**	NA	NA	0.19 U	**3.3**	**1**
	Dibenz(a,h)anthracene	0.7	0.7	4	4	0.088 U	0.11 U	NA	NA	NA	NA	NA	**13**	NA	NA	**1.2**	NA	NA	0.19 U	0.38 U	**0.1825 J**
	Fluoranthene	1,000	1,000	3,000	3,000	**2.2**	**3.0**	NA	NA	NA	NA	**280**	**170**	**70**	NA	**6.3**	NA	NA	**0.19**	**5.2**	**0.97**
	Fluorene	1,000	1,000	3,000	3,000	**0.089**	**0.14**	NA	NA	NA	NA	**25**	**16**	NA	NA	**1.5**	NA	NA	0.19 U	**0.41**	0.22 U
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**0.55**	**0.78**	NA	NA	NA	NA	**46**	**35**	NA	NA	**3.2**	NA	NA	0.19 U	**1.8**	**0.84**
	2-Methylnaphthalene	80	300	80	500	0.088 U	0.11 U	NA	NA	NA	NA	NA	**4.0**	NA	NA	**0.55**	NA	NA	0.19 U	0.38 U	0.22 U
	Phenanthrene	500	500	1,000	1,000	**1.4**	**1.9**	NA	NA	NA	NA	**220**	**130**	**72**	NA	**15**	NA	NA	0.19 U	**4.3**	**0.465**
	Pyrene	1,000	1,000	3,000	3,000	**1.6**	0.11 U	NA	NA	NA	NA	**180**	**140**	**78**	NA	**13**	NA	NA	0.19 U	**4.8**	**0.66**
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				IW-1	IW-2	RS-1	RS-2	RS-3	RS-4	Bethel-2			Bethel-3				NM-ROW-1		
		Sample Depth (ft.):				0-0.5	0-0.5	1-4	0.5-4	0.5-4	0.5-4	0.5-3	3-7	7-10	0-1	0.5-3	0-1	1-3	0-1	1-3	5-7
		Sample Date:				12/23/2004	12/23/2004	10/22/2004	10/22/2004	10/22/2004	10/22/2004 combo	8/23/2005	8/23/2005 combo	8/23/2005	9/8/2005	8/23/2005	06/10/2011	06/10/2011	3/24/2011	3/24/2011	3/24/2011 combo
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																
PCBs																					
(mg/kg)	Total PCBs	1	1	4	4	**0.27**	**5.71**	**2.07**	**4.22**	**7.31**	**7.93**	**2.706**	**7.034**	**0.656**	**3.815**	**61.83**	**22.3**	**22.7**	**1.54 J**	**17.0 J**	**1.239 J**
TEQ Summation^																					
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3.4E-04**	**1.7E-04**	NA	NA	NA
Metals, total																					
(mg/kg)	Antimony	20	20	30	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.8 U	2.8 U	3.25 U
	Arsenic	20	20	20	20	**1.81**	**6.38**	NA	NA	NA	NA	**14**	**9.5**	**7**	NA	**13**	NA	NA	2.8 U	**29**	**15.5**
	Barium	1,000	1,000	3,000	3,000	**19**	**584**	NA	NA	NA	NA	**972**	**735.5**	**947**	NA	**1,010**	NA	NA	**40**	**710**	**450**
	Beryllium	90	90	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U	0.325 U
	Cadmium	70	70	100	100	**0.81**	**3.77**	NA	NA	NA	NA	**7**	**6**	**3**	NA	**6**	NA	NA	0.28 U	**3.4**	**9.4**
	Chromium (III)	1,000	1,000	3,000	3,000	**7.14**	**57**	NA	NA	NA	NA	**82**	**55.5**	**270**	NA	**195**	NA	NA	**9.1**	**65**	**26**
	Chromium (VI)	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	200	200	600	600	**44**	**560**	NA	NA	NA	NA	**1,370**	**4,700**	**345**	NA	**645**	NA	NA	**100**	**860**	**760**
	Mercury	20	20	30	30	**0.063**	**0.835**	NA	NA	NA	NA	**1.04**	**0.747**	**0.14**	NA	**0.931**	NA	NA	**0.076**	**1.6**	**0.74**
	Nickel	600	600	1000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5.3**	**28**	**34.5**
	Selenium	400	400	700	700	0.12 U	0.15 U	NA	NA	NA	NA	NA	**1.10**	**0.74**	NA	NA	NA	NA	R	R	R
	Silver	100	100	200	200	0.06 U	**0.38**	NA	NA	NA	NA	NA	**0.37**	NA	NA	NA	NA	NA	0.55 U	0.56 U	0.655 U
	Vanadium	400	400	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**13**	**46**	**24.5**
	Zinc	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**40**	**500**	**570**

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				NM-ROW-2				NM-ROW-3				NM-ROW-4				RG-ROW-1		
		Sample Depth (ft.):				0-1	1-3	5-7	7.5-8	0-1	1-3	5-7	8.5-10	0-1	1-3	5-7	8-10	0-1	1-3	5-7
		Sample Date:				3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3															
VOCs																				
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10	30	10	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																				
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	40	500	40	1,000	0.38 U	**11**	**0.43**	0.59 U	0.43 U	0.20 U	**36**	0.77 U	0.18 U	0.40 U	1.8 U	0.45 U	0.44 U	0.77 U	0.47 U
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	300	500	300	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																				
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																				
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	**0.77**	**2.6**	0.22 U	0.59 U	0.43 U	0.20 U	**8.1**	0.77 U	**0.37**	0.40 U	1.8 U	0.45 U	0.44 U	0.77 U	0.47 U
	Acenaphthylene	600	10	600	10	0.38 U	**4.4**	0.22 U	0.59 U	0.43 U	0.20 U	**1.7**	0.77 U	0.18 U	0.40 U	1.8 U	0.45 U	0.44 U	0.77 U	0.47 U
	Anthracene	1,000	1,000	3,000	3,000	**1.6**	**9.6**	**0.68**	0.59 U	**0.71**	0.20 U	**21**	0.77 U	**0.67**	**1.1**	**7.7**	0.45 U	0.44 U	**1.7**	**1.1**
	Benzo(a)anthracene	7	7	40	40	**3.9**	**15**	**1.4**	0.59 U	**2.2**	**0.45**	**20**	0.77 U	**2.4**	**3.6**	**12**	0.45 U	**1.5**	**3.9**	**4.6**
	Benzo(a)pyrene	2	2	4	4	**3.6**	**14**	**1.3**	0.59 U	**1.9**	**0.46**	**17**	0.77 U	**2.2**	**3.0**	**8.9**	0.45 U	**1.5**	**4.1**	**5.1**
	Benzo(b)fluoranthene	7	7	40	40	**4.6**	**17**	**1.5**	0.59 U	**2.6**	**0.56**	**20**	0.77 U	**2.8**	**3.3**	**10**	0.45 U	**1.8**	**5.1**	**6.5**
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**1.8**	**5.2**	**0.57**	0.59 U	**0.84**	**0.40**	**6.0**	0.77 U	**1.6**	**1.9**	**4.6**	0.45 U	**0.80**	**2.5**	**2.0**
	Benzo(k)fluoranthene	70	70	400	400	**1.8**	**7.0**	**0.61**	0.59 U	**1.0**	**0.25**	**7.1**	0.77 U	**1.1**	**1.2**	**4.4**	0.45 U	**0.63**	**1.9**	**2.6**
	Chrysene	70	70	400	400	**3.9**	**14**	**1.4**	0.59 U	**2.2**	**0.49**	**18**	0.77 U	**2.6**	**3.7**	**11**	0.45 U	**1.6**	**4.2**	**4.8**
	Dibenz(a,h)anthracene	0.7	0.7	4	4	**0.43**	2.0 U	0.22 U	0.59 U	0.43 U	0.20 U	**1.7**	0.77 U	**0.44**	**0.56**	1.8 U	0.45 U	0.44 U	0.77 U	**0.66**
	Fluoranthene	1,000	1,000	3,000	3,000	**7.4**	**30**	**2.5**	0.59 U	**3.8**	**0.88**	**50**	0.77 U	**2.8**	**5.2**	**25**	0.45 U	**1.5**	**5.2**	**5.8**
	Fluorene	1,000	1,000	3,000	3,000	**0.70**	**6.1**	**0.33**	0.59 U	0.43 U	0.20 U	**13**	0.77 U	**0.38**	**0.56**	**2.8**	0.45 U	0.44 U	**0.89**	**0.48**
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**2.1**	**6.5**	**0.69**	0.59 U	**0.99**	**0.41**	**7.6**	0.77 U	**1.7**	**2.1**	**5.7**	0.45 U	**0.88**	**2.3**	**2.5**
	2-Methylnaphthalene	80	300	80	500	0.38 U	**4.7**	0.22 U	0.59 U	0.43 U	0.20 U	**9.0**	0.77 U	0.18 U	0.40 U	1.8 U	0.45 U	0.44 U	0.77 U	0.47 U
	Phenanthrene	500	500	1,000	1,000	**6.6**	**41**	**2.7**	0.59 U	**3.6**	**0.43**	**77**	0.77 U	**3.7**	**5.5**	**24**	0.45 U	**1.3**	**6.8**	**4.8**
	Pyrene	1,000	1,000	3,000	3,000	**4.9**	**22**	**1.9**	0.59 U	**2.8**	**0.86**	**45**	0.77 U	**2.5**	**6.2**	**19**	0.45 U	**2.1**	**5.3**	**5.7**
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				NM-ROW-2				NM-ROW-3				NM-ROW-4				RG-ROW-1		
		Sample Depth (ft.):				0-1	1-3	5-7	7.5-8	0-1	1-3	5-7	8.5-10	0-1	1-3	5-7	8-10	0-1	1-3	5-7
		Sample Date:				3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3															
PCBs																				
(mg/kg)	Total PCBs	1	1	4	4	**3.83 J**	**23.9 J**	**0.806 J**	0.173 UJ	**3.82 J**	**0.399 J**	**0.832 J**	**1.013 J**	**0.767 J**	**61.9 J**	**62.3 J**	**1.912 J**	**7.61 J**	**1.568 J**	**3.40 J**
TEQ Summation^																				
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																				
(mg/kg)	Antimony	20	20	30	30	2.8 U	2.9 U	3.2 U	8.6 U	3.1 U	2.8 U	3.4 U	12 U	2.6 U	2.9 U	3.4 U	6.6 U	3.2 U	2.9 U	3.5 U
	Arsenic	20	20	20	20	**3.4**	**7.4**	**17**	8.6 U	**3.5**	2.8 U	**12**	12 U	2.6 U	**6.2**	**15**	6.6 U	**11**	**15**	**13**
	Barium	1,000	1,000	3,000	3,000	**440**	**780**	**380**	**190**	**440**	**63**	**730**	**130**	**30**	**380**	**2,000**	**69**	**610**	**750**	**290**
	Beryllium	90	90	200	200	0.28 U	0.29 U	0.32 U	0.86 U	0.31 U	0.28 U	0.34 U	1.2 U	0.26 U	0.29 U	**0.45**	0.66 U	0.32 U	0.29 U	0.35 U
	Cadmium	70	70	100	100	**1.4**	**2.1**	**2.5**	**1.1**	**1.3**	0.28 U	**1.9**	1.2 U	0.26 U	**1.3**	**7.1**	0.66 U	**2.2**	**3.5**	**1.4**
	Chromium (III)	1,000	1,000	3,000	3,000	**80**	**81**	**44**	**11**	**110**	**20**	**140**	**14**	**5.0**	**32**	**370**	**10**	**33**	**52**	**32**
	Chromium (VI)	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	200	200	600	600	**370**	**1,100**	**2,000**	**340**	**370**	**380**	**420**	**83**	**83**	**610**	**2,000**	**35**	**740**	**1,000**	**470**
	Mercury	20	20	30	30	**0.25**	**1.1**	**1.5**	**0.18**	**0.73**	**0.12**	**0.32**	0.11 U	**0.16**	**0.73**	**1.0**	0.066 U	**0.90**	**0.53**	**3.2**
	Nickel	600	600	1000	1000	**12**	**27**	**65**	**20**	**26**	**12**	**41**	**11**	**2.8**	**14**	**57**	**3.7**	**19**	**31**	**23**
	Selenium	400	400	700	700	R	R	R	R	R	R	R	R	R	R	R	R	6.4 U	5.7 U	6.9 U
	Silver	100	100	200	200	0.56 U	0.59 U	3.2 U	1.7 U	0.62 U	0.57 U	0.67 U	2.3 U	0.52 U	0.58 U	0.68 U	1.3 U	0.64 U	0.57 U	0.69 U
	Vanadium	400	400	700	700	**67**	**60**	**44**	**18**	**63**	**19**	**85**	**17**	**8.8**	**28**	**210**	**15**	**30**	**49**	**36**
	Zinc	1,000	1,000	3,000	3,000	**240**	**550**	**1,000**	**250**	**250**	**44**	**640**	**90**	**46**	**330**	**880**	**24**	**510**	**1,100**	**320**

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				RG-ROW-2			RG-ROW-3			SB-NM-1					SB-NM-2	SB-NM-4				
		Sample Depth (ft.):				0-1	1-3	3-5	0-1	1-3	5-7	0-1	1-3	5-7	12-13	13-15	11-13	0-1	1-3	1-3	5-7	11-13
		Sample Date:				4/1/2011	4/1/2011 combo	4/1/2011	4/1/2011	4/1/2011	4/1/2011	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	6/8/2011 combo	12/14/10	12/14/10
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																	
VOCs																						
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10	30	10	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																						
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	40	500	40	1,000	**1.2**	**0.775**	**0.25**	0.19 U	**1.2**	**1.3**	0.23 U	0.21 U	0.20 U	0.29 U	NA	0.68 U	0.22 U	0.21 U	NA	0.26 U	0.58 U
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	300	500	300	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																						
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																						
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	**3.3**	**2.2**	**1.3**	0.19 U	**5.4**	**2.3**	0.23 U	0.21 U	0.20 U	0.29 U	NA	0.68 U	0.22 U	0.21 U	NA	0.26 U	0.58 U
	Acenaphthylene	600	10	600	10	0.43 U	**3.1**	**0.50**	0.19 U	0.45 U	0.91 U	0.23 U	0.21 U	0.20 U	0.29 U	NA	0.68 U	0.22 U	0.21 U	NA	0.26 U	0.58 U
	Anthracene	1,000	1,000	3,000	3,000	**5.3**	**16**	**8.6**	0.19 U	**11**	**5.1**	**0.49**	**0.23**	0.20 U	0.29 U	NA	0.68 U	**0.45**	0.21 U	NA	0.26 U	0.58 U
	Benzo(a)anthracene	7	7	40	40	**13**	**23**	**8.3**	**0.47**	**29**	**12**	**1.2**	**0.72**	**0.22**	0.29 U	NA	0.68 U	**1.1**	**0.51**	NA	**0.59**	0.58 U
	Benzo(a)pyrene	2	2	4	4	**11**	**18.5**	**6.4**	**0.51**	**27**	**11**	**1.1**	**0.66**	**0.25**	0.29 U	NA	0.68 U	**0.98**	**0.50**	NA	**0.59**	0.58 U
	Benzo(b)fluoranthene	7	7	40	40	**14**	**21.5**	**7.8**	**0.76**	**35**	**14**	**1.6**	**0.91**	**0.32**	0.29 U	NA	0.68 U	**1.3**	**0.67**	NA	**0.82**	0.58 U
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**4.3**	**5.4**	**1.9**	0.19 U	**9.2**	**5.3**	**0.46**	**0.28**	0.20 U	0.29 U	NA	0.68 U	**0.51**	**0.25**	NA	**0.28**	0.58 U
	Benzo(k)fluoranthene	70	70	400	400	**6.6**	**9.65**	**3.2**	**0.30**	**13**	**5.3**	**0.57**	**0.35**	0.20 U	0.29 U	NA	0.68 U	**0.46**	**0.24**	NA	**0.31**	0.58 U
	Chrysene	70	70	400	400	**12**	**21**	**7.3**	**0.48**	**29**	**12**	**1.3**	**0.70**	**0.25**	0.29 U	NA	0.68 U	**1.1**	**0.54**	NA	**0.63**	0.58 U
	Dibenz(a,h)anthracene	0.7	0.7	4	4	**1.3**	**1.65**	**0.59**	0.19 U	**2.5**	**1.5**	0.23 U	0.21 U	0.20 U	0.29 U	NA	0.68 U	0.22 U	0.21 U	NA	0.26 U	0.58 U
	Fluoranthene	1,000	1,000	3,000	3,000	**29**	**64**	**25**	**1.1**	**80**	**29**	**1.9**	**1.0**	**0.30**	0.29 U	NA	0.68 U	**1.8**	**0.74**	NA	**0.81**	0.58 U
	Fluorene	1,000	1,000	3,000	3,000	**2.7**	**4.3**	**2.2**	0.19 U	**4.5**	**2.7**	0.23 U	0.21 U	0.20 U	0.29 U	NA	0.68 U	0.22 U	0.21 U	NA	0.26 U	0.58 U
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**5.5**	**7.35**	**2.6**	**0.21**	**19**	**6.6**	**0.63**	**0.37**	0.20 U	0.29 U	NA	0.68 U	**0.68**	**0.29**	NA	**0.34**	0.58 U
	2-Methylnaphthalene	80	300	80	500	**0.86**	**1**	**0.49**	0.19 U	**0.96**	0.91 U	0.23 U	0.21 U	0.20 U	0.29 U	NA	0.68 U	0.22 U	0.21 U	NA	0.26 U	0.58 U
	Phenanthrene	500	500	1,000	1,000	**20**	**64**	**31**	**0.60**	**53**	**22**	**2.0**	**0.88**	0.20 U	0.29 U	NA	0.68 U	**1.8**	**0.73**	NA	**0.68**	0.58 U
	Pyrene	1,000	1,000	3,000	3,000	**21**	**43.5**	**16**	**0.57**	**51**	**18**	**1.8**	**1.1**	**0.33**	0.29 U	NA	0.68 U	**1.7**	**0.74**	NA	**0.77**	0.58 U
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte					Sample ID:	RG-ROW-2		RG-ROW-3			SB-NM-1					SB-NM-2	SB-NM-4				
						Sample Depth (ft.):	0-1	1-3	3-5	0-1	1-3	5-7	0-1	1-3	5-7	12-13	13-15	11-13	0-1	1-3	1-3	5-7	11-13
						Sample Date:	4/1/2011	4/1/2011 combo	4/1/2011	4/1/2011	4/1/2011	4/1/2011	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	6/8/2011 combo	12/14/10	12/14/10
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																		
PCBs																							
(mg/kg)	Total PCBs	1	1	4	4	**11.61 J**	**4.097 J**	**0.108 J**	**0.196 J**	**9.96 J**	**28.52 J**	**41.33 J**	**6.72 J**	**3.88 J**	**17.6 J**	**49.2 J**	**0.298 J**	**49.66 J**	**45.58 J**	NA	**7.73 J**	0.176 UJ
TEQ Summation^																							
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																							
(mg/kg)	Antimony	20	20	30	30	3.2 U	3 U	2.7 U	3.0 U	3.2 U	3.1 U	3.3 U	3.1 U	2.9 U	4.2 U	NA	9.9 U	3.1 U	**9.8**	NA	**12**	8.7 U
	Arsenic	20	20	20	20	**15**	**4.075 J**	2.6 U	3.0 U	3.2 U	**9.4**	**7.6**	**4.0**	**12**	**8.5**	NA	9.9 U	**7.3**	**8.4**	NA	**17**	8.7 U
	Barium	1,000	1,000	3,000	3,000	**950**	**540**	**98**	**39**	**240**	**530**	**1,300**	**620**	**480**	**700**	NA	**62**	**1,500**	**2,300**	NA	**3,300**	**68**
	Beryllium	90	90	200	200	0.32 U	0.3 U	0.26 U	0.30 U	0.32 U	0.31 U	0.33 U	0.31 U	**0.44**	0.42 U	NA	0.99 U	**0.68**	0.31 U	NA	0.39 U	0.87 U
	Cadmium	70	70	100	100	**3.1**	**1.0725 J**	**0.31**	0.30 U	**0.69**	**2.1**	**3.8**	**1.5**	**1.7**	**6.1**	**4.0**	0.99 U	**5.1**	**5.6**	NA	**7.4**	**2.4**
	Chromium (III)	1,000	1,000	3,000	3,000	**140**	**38**	**8.1**	**15**	**55**	**44**	**150**	**44**	**28**	**73**	**45**	**20**	**150**	**680**	**590**	**360**	**14**
	Chromium (VI)	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**8**	NA	NA
	Lead	200	200	600	600	**740**	**1,000**	**110**	**36**	**320**	**710**	**690**	**330**	**630**	**610**	**310**	**77**	**760**	**820**	NA	**2,300**	**37**
	Mercury	20	20	30	30	**1.8**	**0.815**	**0.10**	**0.042**	**0.42**	**0.99**	**0.96**	**0.35**	**1.8**	**0.24**	NA	**0.033**	**0.77**	**0.91**	NA	**1.1**	**0.060**
	Nickel	600	600	1000	1000	**41**	**16**	**3.8**	**8.8**	**55**	**34**	**31**	**42**	**16**	**30**	**17**	**17**	**38**	**66**	NA	**190**	**13**
	Selenium	400	400	700	700	6.5 U	5.95 U	5.3 U	6.0 U	6.4 U	6.3 U	6.7 U	6.1 U	5.8 U	8.4 U	NA	20 U	6.2 U	6.1 U	NA	78 U	17 U
	Silver	100	100	200	200	0.65 U	0.595 U	0.53 U	0.60 U	0.64 U	0.63 U	0.67 U	0.61 U	0.58 U	0.84 U	NA	2.0 U	0.62 U	6.1 U	NA	7.8 U	1.7 U
	Vanadium	400	400	700	700	**83**	**26**	**11**	**15**	**37**	**32**	**99**	**29**	**41**	**28**	NA	**19**	**130**	**290**	NA	**240**	**15**
	Zinc	1,000	1,000	3,000	3,000	**780**	**380**	**64**	**40**	**310**	**510**	**500**	**290**	**420**	**460**	NA	**68**	**560**	**800**	NA	**1,600**	**93**

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-5				SB-NM-6				SB-NM-6		SB-NM-7						
		Sample Depth (ft.):				0-1	1-3	7-9	12-14	0-1	1-3	1-3	5-7	0-1	1-3	0-1	1-3	1-3	1.5-2.5	2.5-3	5-7	7-9
		Sample Date:				12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	6/8/2011	12/14/10	06/08/2011	06/08/2011	12/15/10	12/15/10	6/10/2011	6/10/2011	6/10/2011	12/15/10 combo	12/15/10
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																	
VOCs																						
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**67**	**0.015**	NA	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**22**	**0.0055**	NA	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5.0**	0.0033 U	NA	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**37**	**0.0093**	NA	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**10**	0.0033 U	NA	NA
	Tetrachloroethylene	10	30	10	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.4 U	0.0033 U	NA	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**150**	**0.059**	NA	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**250**	**0.074**	NA	NA
VPH																						
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.4 U	0.0033 U	NA	NA
	Naphthalene	40	500	40	1,000	**0.90**	0.21 U	**4.5**	**3.8**	0.21 U	**0.81**	NA	0.44 U	NA	NA	0.40 U	0.46 U	NA	**26**	0.0067 U	0.465 U	0.45 U
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.4 U	0.0033 U	NA	NA
	Xylenes	300	500	300	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**4.2**	0.0067 U	NA	NA
EPH																						
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																						
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	**1.3**	0.21 U	**2.4**	2.4 U	0.21 U	**1.0**	NA	0.44 U	NA	NA	**0.79**	0.46 U	NA	NA	NA	0.465 U	0.45 U
	Acenaphthylene	600	10	600	10	0.47 U	0.21 U	**6.5**	**5.1**	0.21 U	0.42 U	NA	**0.83**	NA	NA	**0.75**	0.46 U	NA	NA	NA	0.465 U	0.45 U
	Anthracene	1,000	1,000	3,000	3,000	**2.0**	0.21 U	**11**	**9.4**	**0.49**	**2.2**	NA	**2.4**	NA	NA	**4.4**	**0.60**	NA	NA	NA	**0.375 J**	**0.66**
	Benzo(a)anthracene	7	7	40	40	**3.3**	0.21 U	**16**	**14**	**1.3**	**4.9**	NA	**5.8**	NA	NA	**7.9**	**2.1**	NA	NA	NA	**1.125**	**2.4**
	Benzo(a)pyrene	2	2	4	4	**2.6**	**0.61**	**14**	**12**	**1.1**	**4.1**	NA	**5.0**	NA	NA	**5.8**	**1.9**	NA	NA	NA	**0.99**	**2.4**
	Benzo(b)fluoranthene	7	7	40	40	**3.7**	**0.52**	**17**	**16**	**1.5**	**5.0**	NA	**5.6**	NA	NA	**7.0**	**2.2**	NA	NA	NA	**1.3**	**3.1**
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**0.80**	**1.1**	**7.4**	**5.1**	**0.56**	**3.4**	NA	**3.5**	NA	NA	**3.3**	**1.1**	NA	NA	NA	**0.475**	**1.2**
	Benzo(k)fluoranthene	70	70	400	400	**0.53**	**0.23**	**4.3**	**5.1**	**0.53**	**1.8**	NA	**2.0**	NA	NA	**2.3**	**0.88**	NA	NA	NA	**0.51**	**0.96**
	Chrysene	70	70	400	400	**3.4**	**0.23**	**15**	**13**	**1.3**	**4.8**	NA	**5.5**	NA	NA	**7.3**	**2.0**	NA	NA	NA	**1.125**	**2.6**
	Dibenz(a,h)anthracene	0.7	0.7	4	4	0.47 U	0.21 U	**2.3**	2.4 U	0.21 U	**1.0**	NA	**1.0**	NA	NA	**1.3**	0.46 U	NA	NA	NA	0.465 U	0.45 U
	Fluoranthene	1,000	1,000	3,000	3,000	**6.0**	**0.25**	**38**	**32**	**2.5**	**9.2**	NA	**11**	NA	NA	**16**	**3.2**	NA	NA	NA	**1.95**	**3.4**
	Fluorene	1,000	1,000	3,000	3,000	**1.2**	0.21 U	**6.9**	**5.2**	0.21 U	**1.1**	NA	**0.99**	NA	NA	**1.5**	0.46 U	NA	NA	NA	0.465 U	0.45 U
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**1.2**	**1.1**	**8.5**	**7.2**	**0.69**	**4.2**	NA	**4.7**	NA	NA	**4.7**	**1.5**	NA	NA	NA	**0.64**	**1.5**
	2-Methylnaphthalene	80	300	80	500	**0.57**	0.21 U	**4.1**	**3.4**	0.21 U	**0.43**	NA	0.44 U	NA	NA	0.40 U	0.46 U	NA	NA	NA	0.465 U	0.45 U
	Phenanthrene	500	500	1,000	1,000	**10**	**0.22**	**49**	**42**	**2.2**	**8.3**	NA	**9.6**	NA	NA	**16**	**2.2**	NA	NA	NA	**1.6**	**2.2**
	Pyrene	1,000	1,000	3,000	3,000	**4.7**	**0.28**	**29**	**23**	**2.1**	**9.6**	NA	**12**	NA	NA	**15**	**3.2**	NA	NA	NA	**1.5**	**3.6**
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-5				SB-NM-6				SB-NM-6		SB-NM-7					
		Sample Depth (ft.):				0-1	1-3	7-9	12-14	0-1	1-3	1-3	5-7	0-1	1-3	0-1	1-3	1-3	1.5-2.5	2.5-3	5-7	7-9
		Sample Date:				12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	6/8/2011	12/14/10	06/08/2011	06/08/2011	12/15/10	12/15/10	6/10/2011	6/10/2011	6/10/2011	12/15/10 combo	12/15/10
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																	
PCBs																						
(mg/kg)	Total PCBs	1	1	4	4	**13.59 J**	**3.097 J**	**1.957 J**	**2.041 J**	**17.14 J**	**45.51 J**	NA	**6.53 J**	**8.8**	**37.7**	**6.49 J**	**6.02 J**	NA	NA	NA	**4.021 J**	NA
TEQ Summation^																						
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	**2.6E-04**	**5.8E-04**	NA	NA	NA	NA	NA	NA	NA
Metals, total																						
(mg/kg)	Antimony	20	20	30	30	3.4 U	3.2 U	2.8 U	3.6 U	3.1 U	3.0 U	NA	3.2 U	NA	NA	3.0 U	3.4 U	NA	NA	NA	3.45 U	3.4 U
	Arsenic	20	20	20	20	**12**	**19**	**8.4**	**7.9**	**7.1**	**14**	NA	**7.6**	NA	NA	3.0 U	**12**	NA	NA	NA	**15.5**	**11**
	Barium	1,000	1,000	3,000	3,000	**3,600**	**2,100**	**500**	**340**	**840**	**7,300**	NA	**1,500**	NA	NA	**110**	**1,300**	NA	NA	NA	**755**	**450**
	Beryllium	90	90	200	200	**0.56**	**0.62**	**0.93**	0.36 U	**0.33**	**1.1**	NA	**0.40**	NA	NA	0.30 U	0.34 U	NA	NA	NA	0.345 U	0.33 U
	Cadmium	70	70	100	100	**15**	**3.3**	**2.1**	**2.8**	**2.8**	**5.7**	NA	**2.7**	NA	NA	**0.54**	**4.2**	NA	NA	NA	**3.1**	**2.8**
	Chromium (III)	1,000	1,000	3,000	3,000	**160**	**64**	**41**	**61**	**79**	**350**	**740**	**130**	NA	NA	**14**	**490**	**76**	NA	NA	**190**	**26**
	Chromium (VI)	100	100	200	200	NA	NA	NA	NA	NA	NA	**9.6**	NA	NA	NA	NA	NA	**26**	NA	NA	NA	NA
	Lead	200	200	600	600	**1,600**	**4,200**	**1,700**	**620**	**1,200**	**2,200**	NA	**920**	NA	NA	**200**	**3,400**	NA	NA	NA	**1,280**	**1,000**
	Mercury	20	20	30	30	**0.91**	**0.63**	**0.42**	**0.35**	**0.74**	**1.1**	NA	**0.47**	NA	NA	**0.14**	**1.0**	NA	NA	NA	**1.5**	**0.40**
	Nickel	600	600	1000	1000	**56**	**39**	**30**	**31**	**28**	**82**	NA	**39**	NA	NA	**7.0**	**100**	NA	NA	NA	**56**	**34**
	Selenium	400	400	700	700	6.8 U	64 U	5.6 U	72 U	6.2 U	61 U	NA	6.3 U	NA	NA	5.9 U	6.9 U	NA	NA	NA	6.9 U	6.7 U
	Silver	100	100	200	200	0.68 U	0.64 U	1.1 U	0.72 U	0.62 U	6.1 U	NA	0.63 U	NA	NA	0.59 U	1.4 U	NA	NA	NA	0.69 U	0.67 U
	Vanadium	400	400	700	700	**93**	**46**	**180**	**82**	**57**	**220**	NA	**82**	NA	NA	**19**	**250**	NA	NA	NA	**100**	**22**
	Zinc	1,000	1,000	3,000	3,000	**1,700**	**1,100**	**500**	**370**	**540**	**1,600**	NA	**620**	NA	NA	**82**	**1,100**	NA	NA	NA	**880**	**420**

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-7		SB-NM-7A	SB-NM-8			SB-NM-9			SB-NM-10				SB-NM-11			
		Sample Depth (ft.):				0-1	1-3	1.5-2.5	0-1	1-3	5-7	0-1	1-3	7-9	0-1	1-3	3-5	5-7	0-1	1-3	3-5	5-7
		Sample Date:				06/10/2011	06/10/2011	6/10/2011	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010 combo	12/15/2010	12/15/2010	12/15/2010	12/15/2010
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																	
VOCs																						
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10	30	10	200	NA	NA	**0.0073**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																						
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	40	500	40	1,000	NA	NA	0.0075 U	0.46 U	0.44 U	0.87 U	0.48 U	**0.45**	3.6 U	2.1 U	**0.23**	**1.0**	NA	0.51 U	**0.86**	**0.81**	NA
	Toluene	500	500	1,000	1,000	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	300	500	300	1,000	NA	NA	0.0075 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																						
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																						
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	NA	NA	NA	0.46 U	0.44 U	0.87 U	**0.87**	**0.76**	3.6 U	2.1 U	**0.58**	**0.38**	NA	0.51 U	**1.4**	**0.98**	NA
	Acenaphthylene	600	10	600	10	NA	NA	NA	0.46 U	0.44 U	0.87 U	0.48 U	0.41 U	3.6 U	2.1 U	0.21 U	**0.85**	NA	0.51 U	0.42 U	0.21 U	NA
	Anthracene	1,000	1,000	3,000	3,000	NA	NA	NA	**0.89**	**0.90**	**1.1**	**2.5**	**1.6**	3.6 U	**5.0**	**1.4**	**1.3**	NA	**1.1**	**3.8**	**2.6**	NA
	Benzo(a)anthracene	7	7	40	40	NA	NA	NA	**2.4**	**2.3**	**2.7**	**8.6**	**4.3**	3.6 U	**11**	**3.2**	**2.6**	NA	**2.5**	**6.2**	**4.5**	NA
	Benzo(a)pyrene	2	2	4	4	NA	NA	NA	**2.2**	**2.1**	**2.6**	**7.3**	**4.0**	3.6 U	**9.9**	**2.9**	**2.3**	NA	**2.4**	**5.2**	**4.0**	NA
	Benzo(b)fluoranthene	7	7	40	40	NA	NA	NA	**3.0**	**2.7**	**3.4**	**10**	**5.8**	3.6 U	**13**	**4.2**	**3.1**	NA	**3.3**	**7.1**	**6.0**	NA
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	NA	NA	NA	**0.98**	**1.3**	**1.4**	**2.6**	**2.4**	3.6 U	**4.1**	**1.2**	**0.79**	NA	**1.2**	**2.2**	**1.6**	NA
	Benzo(k)fluoranthene	70	70	400	400	NA	NA	NA	**1.1**	**0.93**	**1.4**	**3.6**	**2.0**	3.6 U	**4.8**	**1.5**	**1.2**	NA	**1.2**	**2.7**	**2.0**	NA
	Chrysene	70	70	400	400	NA	NA	NA	**2.5**	**2.4**	**2.8**	**8.8**	**4.3**	3.6 U	**10**	**2.9**	**2.6**	NA	**2.4**	**5.7**	**4.1**	NA
	Dibenz(a,h)anthracene	0.7	0.7	4	4	NA	NA	NA	0.46 U	**0.45**	0.87 U	**0.92**	**0.76**	3.6 U	2.1 U	**0.44**	**0.27**	NA	0.51 U	**0.78**	**0.61**	NA
	Fluoranthene	1,000	1,000	3,000	3,000	NA	NA	NA	**4.3**	**4.7**	**5.4**	**16**	**8.9**	**4.0**	**20**	**6.3**	**8.3**	NA	**5.6**	**11**	**9.8**	NA
	Fluorene	1,000	1,000	3,000	3,000	NA	NA	NA	0.46 U	0.44 U	0.87 U	**0.92**	**0.83**	3.6 U	**2.4**	**0.56**	**1.2**	NA	**0.54**	**1.7**	**1.1**	NA
	Indeno(1,2,3-cd)pyrene	7	7	40	40	NA	NA	NA	**1.3**	**1.6**	**1.8**	**3.6**	**3.1**	3.6 U	**5.3**	**1.6**	**1.1**	NA	**1.4**	**2.9**	**2.3**	NA
	2-Methylnaphthalene	80	300	80	500	NA	NA	NA	0.46 U	0.44 U	0.87 U	0.48 U	0.41 U	3.6 U	2.1 U	0.21 U	**0.77**	NA	0.51 U	**0.53**	**0.38**	NA
	Phenanthrene	500	500	1,000	1,000	NA	NA	NA	**4.1**	**3.9**	**5.2**	**12**	**7.8**	**4.9**	**20**	**5.0**	**12**	NA	**4.8**	**14**	**12**	NA
	Pyrene	1,000	1,000	3,000	3,000	NA	NA	NA	**3.5**	**3.7**	**3.9**	**18**	**6.3**	3.6 U	**17**	**3.9**	**4.1**	NA	**3.5**	**8.1**	**6.6**	NA
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-7		SB-NM-7A	SB-NM-8			SB-NM-9			SB-NM-10				SB-NM-11			
		Sample Depth (ft.):				0-1	1-3	1.5-2.5	0-1	1-3	5-7	0-1	1-3	7-9	0-1	1-3	3-5	5-7	0-1	1-3	3-5	5-7
		Sample Date:				06/10/2011	06/10/2011	6/10/2011	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010 combo	12/15/2010	12/15/2010	12/15/2010	12/15/2010
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																	
PCBs																						
(mg/kg)	Total PCBs	1	1	4	4	**14.6**	**14.8**	NA	**46.78 J**	**22.83 J**	**8.66 J**	**54.08 J**	**4.776 J**	**0.759 J**	**10.11 J**	**12.11 J**	**8.668 J**	**3.31 J**	**17.9 J**	**92.9 J**	**63.0 J**	**1.062 J**
TEQ Summation^																						
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	**3.9E-04**	**2.4E-04**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																						
(mg/kg)	Antimony	20	20	30	30	NA	NA	NA	3.3 U	**4.4**	**6.5**	**6.5**	3.0 U	2.7 U	**6.0**	3.2 U	3.1 U	NA	3.8 U	**5.0**	**4.1**	NA
	Arsenic	20	20	20	20	NA	NA	NA	**15**	**18**	**19**	**14**	**17**	2.7 U	**22**	**16**	**4.1**	NA	**8.5**	**13**	**11**	NA
	Barium	1,000	1,000	3,000	3,000	NA	NA	NA	**1,700**	**1,000**	**830**	**1,800**	**1,100**	**43**	**2,400**	**3,000**	**190**	NA	**1,100**	**590**	**460**	NA
	Beryllium	90	90	200	200	NA	NA	NA	**1.3**	**1.2**	**1.6**	**1.2**	**0.98**	**1.7**	**1.6**	**2.3**	0.31 U	NA	**1.1**	**1.3**	**1.2**	NA
	Cadmium	70	70	100	100	NA	NA	NA	**3.3**	**7.6**	**5.4**	**6.0**	**3.5**	**0.30**	**4.0**	**4.1**	**0.80**	NA	**3.3**	**5.3**	**6.0**	NA
	Chromium (III)	1,000	1,000	3,000	3,000	NA	NA	NA	**200**	**140**	**77**	**160**	**71**	**26**	**190**	**510**	**23**	NA	**72**	**37**	**21**	NA
	Chromium (VI)	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	200	200	600	600	NA	NA	NA	**1,600**	**1,400**	**2,100**	**1,300**	**1,200**	**64**	**5,800**	**1,300**	**300**	NA	**840**	**1,100**	**1,400**	NA
	Mercury	20	20	30	30	NA	NA	NA	**1.4**	**2.1**	**1.8**	**1.3**	**0.44**	**0.015**	**1.4**	**1.2**	**0.55**	NA	**0.99**	**0.89**	**0.87**	NA
	Nickel	600	600	1000	1000	NA	NA	NA	**37**	**49**	**63**	**45**	**40**	**14**	**49**	**63**	**9.8**	NA	**44**	**32**	**22**	NA
	Selenium	400	400	700	700	NA	NA	NA	6.5 U	6.3 U	6.3 U	7.2 U	5.9 U	5.4 U	6.1 U	6.5 U	6.1 U	NA	7.7 U	6.2 U	6.2 U	NA
	Silver	100	100	200	200	NA	NA	NA	0.65 U	**8.0**	**0.79**	**1.9**	0.59 U	0.54 U	**0.81**	0.65 U	0.61 U	NA	0.77 U	**0.70**	0.62 U	NA
	Vanadium	400	400	700	700	NA	NA	NA	**130**	**64**	**61**	**82**	**51**	**28**	**120**	**240**	**16**	NA	**55**	**38**	**30**	NA
	Zinc	1,000	1,000	3,000	3,000	NA	NA	NA	**810**	**1,400**	**890**	**1,100**	**730**	**90**	**1,200**	**1,300**	**200**	NA	**700**	**670**	**810**	NA

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-11		SB-NM-12			SB-NM-13				SB-NM-14		
		Sample Depth (ft.):				0-1	1-3	0-1	1-3	3-5	0-1	1-3	3-5	11-12	0-1	1-3	3-5
		Sample Date:				06/10/2011	06/10/2011	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/16/2010	12/16/2010	12/16/2010 combo
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3												
VOCs																	
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10	30	10	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																	
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	40	500	40	1,000	NA	NA	1.2 U	**1.9**	0.26 U	1.0 U	0.85 U	0.56 U	**0.91**	1.0 U	0.37 U	0.615 U
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	300	500	300	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																	
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																	
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	NA	NA	1.2 U	**1.9**	0.26 U	1.0 U	0.85 U	0.56 U	**0.77**	**1.3**	0.37 U	**0.445 J**
	Acenaphthylene	600	10	600	10	NA	NA	1.2 U	0.87 U	0.26 U	1.0 U	0.85 U	0.56 U	0.49 U	1.0 U	0.37 U	**0.43 J**
	Anthracene	1,000	1,000	3,000	3,000	NA	NA	**2.9**	**5.2**	**0.37**	1.0 U	0.85 U	0.56 U	**2.2**	**1.6**	**0.41**	**1.15 J**
	Benzo(a)anthracene	7	7	40	40	NA	NA	**5.9**	**12**	**1.2**	1.0 U	**1.1**	0.56 U	**2.6**	**3.0**	**1.4**	**5.8**
	Benzo(a)pyrene	2	2	4	4	NA	NA	**4.7**	**10**	**1.5**	1.0 U	**1.1**	0.56 U	**2.2**	**2.7**	**1.3**	**4.7**
	Benzo(b)fluoranthene	7	7	40	40	NA	NA	**7.4**	**15**	**1.9**	**1.2**	**1.4**	**0.57**	**2.7**	**4.0**	**1.5**	**5.2**
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	NA	NA	**1.6**	**4.8**	**0.71**	1.0 U	0.85 U	0.56 U	**0.91**	1.0 U	**0.70**	**2.6**
	Benzo(k)fluoranthene	70	70	400	400	NA	NA	**3.0**	**5.2**	**0.76**	1.0 U	0.85 U	0.56 U	**1.0**	**1.6**	**0.55**	**1.9**
	Chrysene	70	70	400	400	NA	NA	**5.8**	**11**	**1.2**	1.0 U	**1.1**	0.56 U	**2.5**	**3.0**	**1.5**	**5.6**
	Dibenz(a,h)anthracene	0.7	0.7	4	4	NA	NA	1.2 U	**1.6**	**0.26**	1.0 U	0.85 U	0.56 U	0.49 U	1.0 U	0.37 U	**0.63 J**
	Fluoranthene	1,000	1,000	3,000	3,000	NA	NA	**16**	**19**	**2.1**	**2.3**	**1.6**	**0.71**	**5.3**	**5.3**	**1.9**	**7.8**
	Fluorene	1,000	1,000	3,000	3,000	NA	NA	**1.4**	**2.3**	0.26 U	1.0 U	0.85 U	0.56 U	**1.4**	1.0 U	0.37 U	**0.635 J**
	Indeno(1,2,3-cd)pyrene	7	7	40	40	NA	NA	**2.4**	**6.2**	**0.95**	1.0 U	0.85 U	0.56 U	**1.3**	**1.3**	**0.89**	**3.3**
	2-Methylnaphthalene	80	300	80	500	NA	NA	1.2 U	**1.0**	0.26 U	1.0 U	0.85 U	0.56 U	0.49 U	1.0 U	0.37 U	0.615 U
	Phenanthrene	500	500	1,000	1,000	NA	NA	**14**	**22**	**1.7**	**1.3**	**1.2**	**0.64**	**7.7**	**6.5**	**1.9**	**9.3**
	Pyrene	1,000	1,000	3,000	3,000	NA	NA	**9.5**	**18**	**1.5**	**1.6**	**1.5**	**0.77**	**4.4**	**3.3**	**2.8**	**9.3**
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-11		SB-NM-12			SB-NM-13				SB-NM-14		
		Sample Depth (ft.):				0-1	1-3	0-1	1-3	3-5	0-1	1-3	3-5	11-12	0-1	1-3	3-5
		Sample Date:				06/10/2011	06/10/2011	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/16/2010	12/16/2010	12/16/2010 combo
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3												
PCBs																	
(mg/kg)	Total PCBs	1	1	4	4	**27.7**	**28.7**	**11.56 J**	**44.84 J**	**16.58 J**	**14.33 J**	**3.872 J**	**1.492 J**	**0.885 J**	**26.21 J**	**12.08 J**	**3.088 J**
TEQ Summation^																	
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	**4.7E-04**	**4.3E-04**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																	
(mg/kg)	Antimony	20	20	30	30	NA	NA	3.4 U	**6.8**	**6.5**	3.6 U	3.1 U	4.2 U	**4.0**	3.1 U	2.8 U	**8.6**
	Arsenic	20	20	20	20	NA	NA	**31**	**12**	**10**	**9.1**	**14**	**10**	**9.0**	**12**	**13**	**6.1**
	Barium	1,000	1,000	3,000	3,000	NA	NA	**1,300**	**1,500**	**760**	**2,100**	**1,200**	**1,400**	**390**	**1,200**	**840**	**670**
	Beryllium	90	90	200	200	NA	NA	**1.8**	**1.3**	**1.1**	**1.3**	**0.98**	**1.3**	**2.7**	**0.56**	0.28 U	**0.2625 J**
	Cadmium	70	70	100	100	NA	NA	**4.9**	**5.0**	**5.5**	**3.7**	**7.9**	**2.9**	**3.1**	**3.3**	**2.6**	**2**
	Chromium (III)	1,000	1,000	3,000	3,000	NA	NA	**280**	**140**	**46**	**130**	**68**	**150**	**41**	**71**	**48**	**150**
	Chromium (VI)	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	200	200	600	600	NA	NA	**970**	**2,000**	**1,200**	**1,000**	**2,400**	**13,000**	**1,000**	**1,000**	**1,300**	**580**
	Mercury	20	20	30	30	NA	NA	**0.79**	**2.1**	**1.1**	**0.88**	**0.65**	**0.65**	**0.32**	**1.1**	**1.5**	**3.3**
	Nickel	600	600	1000	1000	NA	NA	**65**	**36**	**46**	**35**	**140**	**53**	**32**	**62**	**100**	**25**
	Selenium	400	400	700	700	NA	NA	34 U	6.5 U	7.8 U	7.2 U	6.1 U	17 U	7.1 U	6.2 U	**6.9**	5.95 U
	Silver	100	100	200	200	NA	NA	0.67 U	0.65 U	0.78 U	0.72 U	**1.3**	0.83 U	0.71 U	0.62 U	0.57 U	0.595 U
	Vanadium	400	400	700	700	NA	NA	**170**	**70**	**39**	**83**	**40**	**82**	**280**	**69**	**62**	**75**
	Zinc	1,000	1,000	3,000	3,000	NA	NA	**1,100**	**1,100**	**840**	**860**	**710**	**710**	**710**	**840**	**750**	**1,500**

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
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NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
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U - Compound was not detected at specified quantitation limit.
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VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-15						SB-NM-15		SB-NM-16	SB-NM-17			
		Sample Depth (ft.):				0-1	1-3	1-3	3-5	8.5-9.5	11-12	0-1	1-3	3-5	0-1	1-3	3-5	11.5-13
		Sample Date:				12/16/2010	12/16/2010 combo	6/10/2011	12/16/2010 combo	12/16/2010	12/16/2010	06/10/2011	06/10/2011	12/16/2010	12/16/10	12/16/10	12/16/10	12/16/10 combo
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3													
VOCs																		
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	0.60 U	NA	NA	NA	NA	NA	NA	NA	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	0.60 U	NA	NA	NA	NA	NA	NA	NA	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	1.2 U	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	0.60 U	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	0.60 U	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10	30	10	200	NA	NA	NA	NA	0.60 U	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	**1.9**	NA	NA	NA	NA	NA	NA	NA	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	2.4 U	NA	NA	NA	NA	NA	NA	NA	NA
VPH																		
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	0.60 U	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	40	500	40	1,000	**0.58**	**1.425 J**	NA	0.39 U	**180**	**0.57**	NA	NA	**4.6**	1.2 U	1.0 U	0.20 U	1.045 U
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	0.60 U	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	300	500	300	1,000	NA	NA	NA	NA	1.2 U	NA	NA	NA	NA	NA	NA	NA	NA
EPH																		
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																		
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	**0.78**	**2.6**	NA	0.39 U	NA	**0.68**	NA	NA	**4.0**	1.2 U	1.0 U	**0.21**	1.045 U
	Acenaphthylene	600	10	600	10	0.47 U	1.565 U	NA	0.39 U	NA	**0.70**	NA	NA	**7.0**	1.2 U	1.0 U	0.20 U	1.045 U
	Anthracene	1,000	1,000	3,000	3,000	**1.6**	**4.95**	NA	0.39 U	NA	**2.8**	NA	NA	**19**	**1.6**	1.0 U	**0.67**	1.045 U
	Benzo(a)anthracene	7	7	40	40	**3.0**	**9.95**	NA	**0.89**	NA	**4.7**	NA	NA	**44**	**3.4**	**1.8**	**2.0**	1.045 U
	Benzo(a)pyrene	2	2	4	4	**2.5**	**9.35**	NA	**0.82**	NA	**3.8**	NA	NA	**36**	**3.4**	**1.9**	**2.0**	1.045 U
	Benzo(b)fluoranthene	7	7	40	40	**3.1**	**13.5**	NA	**1.2**	NA	**4.4**	NA	NA	**44**	**4.7**	**2.6**	**2.8**	1.045 U
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**1.1**	**4.9**	NA	0.39 U	NA	**1.5**	NA	NA	**11**	**1.3**	1.0 U	**1.1**	1.045 U
	Benzo(k)fluoranthene	70	70	400	400	**1.1**	**4.75**	NA	**0.44**	NA	**1.6**	NA	NA	**12**	**1.8**	1.0 U	**1.0**	1.045 U
	Chrysene	70	70	400	400	**2.9**	**9.75**	NA	**1.2**	NA	**4.3**	NA	NA	**39**	**3.5**	**1.7**	**2.0**	1.045 U
	Dibenz(a,h)anthracene	0.7	0.7	4	4	0.47 U	**1.125 J**	NA	0.39 U	NA	**0.46**	NA	NA	**3.9**	1.2 U	1.0 U	**0.34**	1.045 U
	Fluoranthene	1,000	1,000	3,000	3,000	**5.9**	**21.5**	NA	**1.5**	NA	**11**	NA	NA	**78**	**8.5**	**3.4**	**3.8**	1.045 U
	Fluorene	1,000	1,000	3,000	3,000	**0.77**	**2.1**	NA	0.39 U	NA	**2.0**	NA	NA	**12**	1.2 U	1.0 U	**0.24**	1.045 U
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**1.5**	**5.95**	NA	**0.48**	NA	**2.1**	NA	NA	**15**	**1.7**	**1.1**	**1.4**	1.045 U
	2-Methylnaphthalene	80	300	80	500	0.47 U	1.565 U	NA	0.39 U	NA	**0.68**	NA	NA	**5.8**	1.2 U	1.0 U	0.20 U	1.045 U
	Phenanthrene	500	500	1,000	1,000	**6.4**	**21**	NA	**1.9**	NA	**17**	NA	NA	**120**	**6.7**	**2.6**	**2.9**	1.045 U
	Pyrene	1,000	1,000	3,000	3,000	**4.9**	**19**	NA	**1.8**	NA	**12**	NA	NA	**91**	**5.5**	**2.3**	**2.5**	1.045 U
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-15						SB-NM-15		SB-NM-16	SB-NM-17			
		Sample Depth (ft.):				0-1	1-3	1-3	3-5	8.5-9.5	11-12	0-1	1-3	3-5	0-1	1-3	3-5	11.5-13
		Sample Date:				12/16/2010	12/16/2010 combo	6/10/2011	12/16/2010 combo	12/16/2010	12/16/2010	06/10/2011	06/10/2011	12/16/2010	12/16/10	12/16/10	12/16/10	12/16/10 combo
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3													
PCBs																		
(mg/kg)	Total PCBs	1	1	4	4	**12.18 J**	**35.64 J**	NA	**1.352 J**	NA	0.0586 U	**27.8**	**39.6**	**1.383 J**	**35.66 J**	**18.14 J**	**8.21 J**	**0.406 J**
TEQ Summation^																		
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	**3.9E-04**	**4.5E-04**	NA	NA	NA	NA	NA
Metals, total																		
(mg/kg)	Antimony	20	20	30	30	**4.0**	**3.075 J**	NA	**2.8 U**	NA	2.7 U	NA	NA	6.6 U	4.1 U	3.7 U	**5.6**	7.8 U
	Arsenic	20	20	20	20	**12**	**20.5**	NA	**2.8 U**	NA	2.7 U	NA	NA	**9.9**	**7.0**	**22**	**11**	7.8 U
	Barium	1,000	1,000	3,000	3,000	**1,700**	**2,450**	NA	**420**	NA	**15**	NA	NA	**370**	**910**	**1,400**	**690**	**215**
	Beryllium	90	90	200	200	**0.77**	**0.875**	NA	**0.28 U**	NA	0.27 U	NA	NA	0.66 U	0.41 U	**0.48**	**0.93**	0.78 U
	Cadmium	70	70	100	100	**4.9**	**4.45**	NA	**0.76**	NA	0.27 U	NA	NA	**1.3**	**5.1**	**3.8**	**3.5**	**2.5**
	Chromium (III)	1,000	1,000	3,000	3,000	**200**	**270**	**270**	**28**	NA	**5.7**	NA	NA	**51**	**97**	**110**	**280**	**27.5**
	Chromium (VI)	100	100	200	200	NA	NA	**20**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	200	200	600	600	**1,500**	**1,400**	NA	**270**	NA	**5.9**	NA	NA	**1,600**	**920**	**1,400**	**1,300**	**370**
	Mercury	20	20	30	30	**1.0**	**1.75**	NA	**0.17**	NA	**0.0094**	NA	NA	**1.1**	**1.4**	**2.1**	**1.1**	**0.115**
	Nickel	600	600	1000	1000	**68**	**83**	NA	**17**	NA	**2.3**	NA	NA	**30**	**32**	**41**	**64**	**31**
	Selenium	400	400	700	700	6.8 U	13 U	NA	**5.6 U**	NA	5.3 U	NA	NA	13 U	8.2 U	7.5 U	12 U	15.5 U
	Silver	100	100	200	200	0.68 U	**2.825 J**	NA	**0.56 U**	NA	0.53 U	NA	NA	1.3 U	0.82 U	0.75 U	1.2 U	1.55 U
	Vanadium	400	400	700	700	**110**	**135**	NA	**64**	NA	**5.3**	NA	NA	**43**	**77**	**64**	**130**	**38.5**
	Zinc	1,000	1,000	3,000	3,000	**810**	**1,300**	NA	**290**	NA	**13**	NA	NA	**470**	**690**	**1,200**	**880**	**585**

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-18					SB-NM-20				SB-NM-20		SB-NM-21			
		Sample Depth (ft.):				0-1	1-3	6-8	10.5-12	12-13.5	0-1	1-3	3-5	7-8	0-1	1-3	0-1	1-3	3-5	6-7
		Sample Date:				12/16/10	12/16/10 combo	12/16/10	12/16/10	12/16/10	12/17/10	12/17/10	12/17/10	12/17/10	06/10/2011	06/10/2011 combo	12/17/10	12/17/10 combo	12/17/10	12/17/10 combo
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3															
VOCs																				
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10	30	10	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																				
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	40	500	40	1,000	0.48 U	0.845 U	3.4 U	0.38 U	NA	0.38 U	**0.95**	0.89 U	0.28 U	NA	NA	0.45 U	0.44 U	**1.1**	0.20 U
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	300	500	300	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																				
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																				
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	0.48 U	0.845 U	3.4 U	0.38 U	NA	0.38 U	**4.1**	0.89 U	0.28 U	NA	NA	0.45 U	0.44 U	**2.1**	0.20 U
	Acenaphthylene	600	10	600	10	0.48 U	0.845 U	3.4 U	0.38 U	NA	0.38 U	0.93 U	0.89 U	0.28 U	NA	NA	0.45 U	0.44 U	0.97 U	0.20 U
	Anthracene	1,000	1,000	3,000	3,000	**1.1**	**0.805 J**	**6.0**	**0.42**	NA	0.38 U	**5.0**	0.89 U	0.28 U	NA	NA	**0.80**	**0.78**	**2.7**	0.20 U
	Benzo(a)anthracene	7	7	40	40	**2.4**	**2.7**	**12**	**1.0**	NA	**0.57**	**15**	**1.7**	0.28 U	NA	NA	**2.9**	**2.25**	**5.5**	0.20 U
	Benzo(a)pyrene	2	2	4	4	**2.2**	**2.45**	**10**	**0.97**	NA	**0.54**	**15**	**1.7**	0.28 U	NA	NA	**3.4**	**2.8**	**5.5**	0.20 U
	Benzo(b)fluoranthene	7	7	40	40	**2.8**	**3.1**	**11**	**1.1**	NA	**0.73**	**22**	**2.2**	0.28 U	NA	NA	**4.2**	**3.55**	**7.1**	0.20 U
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**1.1**	**1.65**	**7.5**	**0.80**	NA	0.38 U	**9.8**	0.89 U	0.28 U	NA	NA	**1.6**	**1.25**	**2.7**	0.20 U
	Benzo(k)fluoranthene	70	70	400	400	**1.1**	**0.975**	**4.3**	0.38 U	NA	0.38 U	**13**	0.89 U	0.28 U	NA	NA	**1.6**	**1.4**	**2.3**	0.20 U
	Chrysene	70	70	400	400	**2.3**	**2.6**	**12**	**1.0**	NA	**0.61**	**16**	**1.7**	0.28 U	NA	NA	**3.1**	**2.35**	**5.5**	0.20 U
	Dibenz(a,h)anthracene	0.7	0.7	4	4	0.48 U	0.845 U	3.4 U	0.38 U	NA	0.38 U	**3.0**	0.89 U	0.28 U	NA	NA	**0.51**	0.44 U	0.97 U	0.20 U
	Fluoranthene	1,000	1,000	3,000	3,000	**4.6**	**6.1**	**23**	**1.8**	NA	**0.65**	**28**	**2.2**	0.28 U	NA	NA	**3.4**	**3.05**	**9.4**	0.20 U
	Fluorene	1,000	1,000	3,000	3,000	**0.55**	0.845 U	3.4 U	0.38 U	NA	0.38 U	**3.5**	0.89 U	0.28 U	NA	NA	0.45 U	0.44 U	**1.4**	0.20 U
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**1.4**	**2.5**	**9.4**	**0.84**	NA	0.38 U	**13**	**1.0**	0.28 U	NA	NA	**2.0**	**1.65**	**3.5**	0.20 U
	2-Methylnaphthalene	80	300	80	500	0.48 U	0.845 U	3.4 U	0.38 U	NA	0.38 U	0.93 U	0.89 U	0.28 U	NA	NA	0.45 U	0.44 U	0.97 U	0.20 U
	Phenanthrene	500	500	1,000	1,000	**4.6**	**3.8**	**19**	**1.8**	NA	**0.77**	**28**	**3.1**	0.28 U	NA	NA	**3.8**	**3.3**	**9.7**	0.20 U
	Pyrene	1,000	1,000	3,000	3,000	**4.2**	**4.65**	**25**	**2.5**	NA	**0.97**	**25**	**2.8**	0.28 U	NA	NA	**4.5**	**3**	**8.3**	0.20 U
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-18					SB-NM-20				SB-NM-20		SB-NM-21			
		Sample Depth (ft.):				0-1	1-3	6-8	10.5-12	12-13.5	0-1	1-3	3-5	7-8	0-1	1-3	0-1	1-3	3-5	6-7
		Sample Date:				12/16/10	12/16/10 combo	12/16/10	12/16/10	12/16/10	12/17/10	12/17/10	12/17/10	12/17/10	06/10/2011	06/10/2011 combo	12/17/10	12/17/10 combo	12/17/10	12/17/10 combo
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3															
PCBs																				
(mg/kg)	Total PCBs	1	1	4	4	**20.85 J**	**28.62 J**	**41.39 J**	**5.658 J**	**0.42 J**	**0.966 J**	**24.28 J**	**12.02 J**	**11.65 J**	**0.8**	**30.9**	**20.24 J**	**21.56 J**	**5.993 J**	**0.10563 J**
TEQ Summation^																				
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	**6.4E-05**	**7.4E-04**	NA	NA	NA	NA
Metals, total																				
(mg/kg)	Antimony	20	20	30	30	3.4 U	**11.275 J**	5.1 U	2.7 U	NA	2.8 U	3.4 U	3.3 U	4.2 U	NA	NA	**3.7**	3.15 U	**4.0**	3.0 U
	Arsenic	20	20	20	20	**15**	**11**	**17**	**3.0**	NA	2.8 U	**6.3**	**15**	4.2 U	NA	NA	**14**	**15.5**	**18**	3.0 U
	Barium	1,000	1,000	3,000	3,000	**1,200**	**1,155**	**2,400**	**190**	NA	**110**	**710**	**670**	**140**	NA	NA	**700**	**2,000**	**2,600**	**24**
	Beryllium	90	90	200	200	**0.62**	**0.5**	**0.76**	0.27 U	NA	0.28 U	0.34 U	0.33 U	0.42 U	NA	NA	0.33 U	0.315 U	0.37 U	0.30 U
	Cadmium	70	70	100	100	**3.5**	**20**	**10**	**0.63**	NA	**0.43**	**2.6**	**4.1**	**0.55**	NA	NA	**4.0**	**3.55**	**4.7**	0.30 U
	Chromium (III)	1,000	1,000	3,000	3,000	**110**	**71.5**	**170**	**14**	NA	**24**	**64**	**42**	**8.1**	NA	NA	**47**	**53**	**160**	**2.8**
	Chromium (VI)	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	200	200	600	600	**940**	**1,400**	**2,200**	**140**	NA	**100**	**970**	**1,500**	**110**	NA	NA	**1,300**	**1,300**	**1,000**	**24**
	Mercury	20	20	30	30	**1.0**	**1.6**	**1.2**	**0.17**	NA	**0.25**	**0.75**	**0.73**	**0.13**	NA	NA	**1.1**	**0.665**	**0.58**	**0.063**
	Nickel	600	600	1000	1000	**37**	**39**	**65**	**9.2**	NA	**12**	**62**	**37**	**5.0**	NA	NA	**89**	**31**	**86**	**1.5**
	Selenium	400	400	700	700	6.9 U	6.2 U	10 U	5.3 U	NA	5.7 U	6.9 U	13 U	8.3 U	NA	NA	6.7 U	6.35 U	15 U	6.1 U
	Silver	100	100	200	200	0.69 U	0.62 U	1.0 U	0.53 U	NA	0.57 U	0.69 U	0.67 U	0.83 U	NA	NA	0.67 U	0.635 U	**2.3**	0.61 U
	Vanadium	400	400	700	700	**77**	**57.5**	**110**	**18**	NA	**21**	**58**	**35**	**11**	NA	NA	**37**	**39**	**65**	**6.4**
	Zinc	1,000	1,000	3,000	3,000	**840**	**760**	**1,600**	**120**	NA	**110**	**800**	**1,300**	**69**	NA	NA	**930**	**1,600**	**1,200**	**12**

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-22						SB-NM-23				SB-NM-25	SB-NM-26			SB-NM-27		
		Sample Depth (ft.):				0-1	1-3	3-5	8-10	11-12	12-13	0-1	1-3	3-5	11-12	7-8	0-1	1-3	5-7	0-1	1-3	5-7
		Sample Date:				12/17/10	12/17/10	12/17/10	12/17/2010 combo	12/17/10	12/17/10	12/17/10	12/17/10	12/17/10	12/17/10	12/17/10	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																	
VOCs																						
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	0.0041 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	0.00205 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	0.00205 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	0.00205 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	0.00205 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10	30	10	200	NA	NA	NA	0.00205 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	0.00205 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	0.00205 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																						
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	0.00205 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	40	500	40	1,000	1.2 U	**0.58**	0.24 U	**0.015**	0.21 U	NA	2.2 U	0.93 U	0.99 U	1.4 U	0.21 U	0.23 U	0.85 U	**5.5**	0.39 U	0.49 U	0.48 U
	Toluene	500	500	1,000	1,000	NA	NA	NA	0.00205 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	300	500	300	1,000	NA	NA	NA	0.0041 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																						
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																						
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	1.2 U	**0.88**	0.24 U	NA	0.21 U	NA	2.2 U	0.93 U	0.99 U	1.4 U	0.21 U	**0.25**	0.85 U	**10**	0.39 U	0.49 U	0.48 U
	Acenaphthylene	600	10	600	10	1.2 U	0.45 U	0.24 U	NA	0.21 U	NA	2.2 U	0.93 U	0.99 U	1.4 U	0.21 U	**0.36**	0.85 U	2.1 U	0.39 U	0.49 U	0.48 U
	Anthracene	1,000	1,000	3,000	3,000	**2.0**	**1.5**	**0.53**	NA	0.21 U	NA	2.2 U	0.93 U	**1.5**	1.4 U	0.21 U	**0.66**	0.85 U	**27**	**0.53**	0.49 U	**0.92**
	Benzo(a)anthracene	7	7	40	40	**5.2**	**3.4**	**1.4**	NA	0.21 U	NA	2.2 U	**2.7**	**4.4**	1.4 U	0.21 U	**1.8**	**1.7**	**41**	**1.9**	**3.7**	**2.6**
	Benzo(a)pyrene	2	2	4	4	**4.7**	**3.0**	**1.2**	NA	0.21 U	NA	2.2 U	**3.6**	**5.7**	1.4 U	0.21 U	**1.9**	**1.6**	**34**	**1.9**	**3.6**	**2.4**
	Benzo(b)fluoranthene	7	7	40	40	**5.9**	**3.7**	**1.4**	NA	0.21 U	NA	**2.3**	**4.1**	**6.9**	1.4 U	0.21 U	**2.4**	**2.3**	**46**	**2.4**	**4.8**	**3.0**
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**2.7**	**2.1**	**0.76**	NA	0.21 U	NA	2.2 U	**3.1**	**2.7**	1.4 U	0.21 U	**0.98**	0.85 U	**15**	**0.93**	**1.7**	**1.2**
	Benzo(k)fluoranthene	70	70	400	400	**2.0**	**1.5**	**0.43**	NA	0.21 U	NA	2.2 U	**1.5**	**2.9**	1.4 U	0.21 U	**0.88**	0.85 U	**17**	**0.91**	**1.9**	**1.1**
	Chrysene	70	70	400	400	**4.9**	**3.3**	**1.3**	NA	0.21 U	NA	2.2 U	**2.8**	**4.4**	1.4 U	0.21 U	**1.9**	**1.7**	**40**	**2.0**	**3.7**	**2.5**
	Dibenz(a,h)anthracene	0.7	0.7	4	4	1.2 U	**0.75**	0.24 U	NA	0.21 U	NA	2.2 U	**1.2**	0.99 U	1.4 U	0.21 U	**0.23**	0.85 U	**5.4**	**0.40**	**0.54**	**0.50**
	Fluoranthene	1,000	1,000	3,000	3,000	**9.2**	**5.7**	**2.6**	NA	0.21 U	NA	**3.7**	**3.1**	**4.8**	1.4 U	0.21 U	**3.6**	**3.0**	**100**	**2.9**	**6.4**	**5.2**
	Fluorene	1,000	1,000	3,000	3,000	1.2 U	**0.81**	**0.24**	NA	0.21 U	NA	2.2 U	0.93 U	0.99 U	1.4 U	0.21 U	**0.29**	0.85 U	**14**	0.39 U	**0.53**	0.48 U
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**3.9**	**2.7**	**0.99**	NA	0.21 U	NA	2.2 U	**3.8**	**3.4**	1.4 U	0.21 U	**1.1**	**1.3**	**18**	**1.3**	**2.0**	**1.5**
	2-Methylnaphthalene	80	300	80	500	1.2 U	0.45 U	0.24 U	NA	0.21 U	NA	2.2 U	0.93 U	0.99 U	1.4 U	0.21 U	0.23 U	0.85 U	**4.0**	0.39 U	0.49 U	0.48 U
	Phenanthrene	500	500	1,000	1,000	**8.9**	**6.6**	**2.0**	NA	0.21 U	NA	**3.3**	**2.9**	**5.9**	1.4 U	0.21 U	**3.2**	**2.6**	**130**	**2.1**	**5.4**	**3.7**
	Pyrene	1,000	1,000	3,000	3,000	**10**	**9.3**	**3.2**	NA	0.21 U	NA	**6.3**	**6.9**	**7.8**	1.4 U	0.21 U	**2.6**	**2.1**	**79**	**2.9**	**4.6**	**3.6**
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-22						SB-NM-23				SB-NM-25	SB-NM-26			SB-NM-27		
		Sample Depth (ft.):				0-1	1-3	3-5	8-10	11-12	12-13	0-1	1-3	3-5	11-12	7-8	0-1	1-3	5-7	0-1	1-3	5-7
		Sample Date:				12/17/10	12/17/10	12/17/10	12/17/2010 combo	12/17/10	12/17/10	12/17/10	12/17/10	12/17/10	12/17/10	12/17/10	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																	
PCBs																						
(mg/kg)	Total PCBs	1	1	4	4	**17.94 J**	**66.45 J**	**25.84 J**	NA	**2.90 J**	**0.0742 J**	**22.51 J**	**60.06 J**	**27.44 J**	**4.63 J**	**0.118 J**	**31.8 J**	**52.1 J**	**3.31 J**	**10.59 J**	**6.36 J**	**13.99 J**
TEQ Summation^																						
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																						
(mg/kg)	Antimony	20	20	30	30	3.4 U	3.3 U	**5.7**	NA	2.9 U	NA	3.3 U	**17**	3.8 U	10 U	2.9 U	3.4 U	3.1 U	3.1 U	3.0 U	3.5 U	3.6 U
	Arsenic	20	20	20	20	**9.9**	**21**	**16**	NA	2.9 U	NA	**8.3**	**9.1**	**16**	10 U	2.9 U	**6.0**	**10**	**17**	**4.8**	**11**	**20**
	Barium	1,000	1,000	3,000	3,000	**1,000**	**1,300**	**1,300**	NA	**120**	NA	**1,200**	**1,400**	**3,900**	**990**	**37**	**880**	**1,200**	**560**	**560**	**1,100**	**1,600**
	Beryllium	90	90	200	200	**0.57**	**0.45**	**0.77**	NA	0.29 U	NA	0.33 U	0.34 U	0.38 U	1.0 U	0.29 U	0.34 U	0.31 U	0.31 U	0.30 U	0.35 U	0.36 U
	Cadmium	70	70	100	100	**3.0**	**4.1**	**3.8**	NA	0.29 U	NA	**3.1**	**2.8**	**5.2**	**1.1**	0.29 U	**2.7**	**3.7**	**2.2**	**1.6**	**3.6**	**4.5**
	Chromium (III)	1,000	1,000	3,000	3,000	**110**	**120**	**270**	NA	**32**	**6.9**	**100**	**120**	**480**	**46**	**15**	**65**	**110**	**45**	**270**	**80**	**99**
	Chromium (VI)	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	200	200	600	600	**1,100**	**1,600**	**1,100**	NA	**23**	NA	**1,100**	**990**	**1,600**	**190**	**37**	**720**	**1,100**	**11,000**	**570**	**1,000**	**1,300**
	Mercury	20	20	30	30	**2.1**	**1.0**	**0.82**	NA	**0.032**	NA	**1.5**	**3.2**	**20**	**0.23**	0.010 U	0.031 U	**0.99**	**1.8**	**0.71**	**1.2**	**1.9**
	Nickel	600	600	1000	1000	**39**	**46**	**43**	NA	**4.6**	NA	**31**	**33**	**61**	**11**	**5.5**	**23**	**40**	**64**	**23**	**39**	**68**
	Selenium	400	400	700	700	6.7 U	6.6 U	6.9 U	NA	5.9 U	NA	6.6 U	6.8 U	7.5 U	20 U	5.9 U	6.7 U	6.3 U	31 U	6.0 U	7.1 U	7.2 U
	Silver	100	100	200	200	0.67 U	0.66 U	1.4 U	NA	0.59 U	NA	0.66 U	0.68 U	3.8 U	2.0 U	0.59 U	0.67 U	**15**	0.61 U	0.60 U	0.71 U	0.72 U
	Vanadium	400	400	700	700	**90**	**73**	**140**	NA	**10**	NA	**68**	**93**	**300**	**39**	**14**	**100**	**97**	**23**	**110**	**58**	**60**
	Zinc	1,000	1,000	3,000	3,000	**870**	**1,000**	**840**	NA	**29**	NA	**910**	**1,200**	**990**	**160**	**20**	**460**	**1,400**	**580**	**320**	**930**	**920**

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-28			SB-NM-28		SB-NM-29				SB-NM-30	SB-NM-31	SB-NM-32	SB-NM-33	
		Sample Depth (ft.):				0-1	1-3	5-7	0-1	1-3	0-1	1-3	5-7	13-14	0-1	0-1	0-1	0-1	1-3
		Sample Date:				3/24/2011	3/24/2011	3/24/2011 combo	06/08/2011	06/08/2011 combo	3/24/2011	3/24/2011	3/24/2011	3/24/2011	4/1/2011	4/1/2011	4/1/2011	06/08/2011	06/08/2011
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3														
VOCs																			
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10	30	10	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																			
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	40	500	40	1,000	**0.94**	0.41 U	**2.9**	NA	NA	2.0 U	**18**	0.41 U	2.3 U	**0.40**	0.35 U	0.29 U	NA	NA
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	300	500	300	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																			
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																			
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	**1.6**	0.41 U	**2.7**	NA	NA	**2.2**	**26**	0.41 U	2.3 U	0.33 U	0.35 U	0.29 U	NA	NA
	Acenaphthylene	600	10	600	10	0.86 U	0.41 U	1.32 U	NA	NA	2.0 U	4.3 U	0.41 U	2.3 U	0.33 U	0.35 U	0.29 U	NA	NA
	Anthracene	1,000	1,000	3,000	3,000	**3.9**	**0.59**	**12**	NA	NA	**4.7**	**47**	**1.0**	**5.6**	**0.45**	0.35 U	0.29 U	NA	NA
	Benzo(a)anthracene	7	7	40	40	**10**	**2.0**	**21**	NA	NA	**12**	**120**	**4.0**	**11**	**1.5**	0.35 U	**0.60**	NA	NA
	Benzo(a)pyrene	2	2	4	4	**8.2**	**2.0**	**21**	NA	NA	**12**	**84**	**3.6**	**9.7**	**1.4**	0.35 U	**0.50**	NA	NA
	Benzo(b)fluoranthene	7	7	40	40	**11**	**2.5**	**24**	NA	NA	**14**	**110**	**4.2**	**11**	**1.7**	0.35 U	**0.63**	NA	NA
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**3.3**	**1.1**	**11**	NA	NA	**9.8**	**44**	**1.6**	**6.2**	**0.61**	0.35 U	0.29 U	NA	NA
	Benzo(k)fluoranthene	70	70	400	400	**4.5**	**0.86**	**8.8**	NA	NA	**5.3**	**38**	**1.6**	**4.4**	**0.72**	0.35 U	0.29 U	NA	NA
	Chrysene	70	70	400	400	**10**	**2.1**	**19**	NA	NA	**13**	**130**	**4.0**	**10**	**1.7**	0.35 U	**0.61**	NA	NA
	Dibenz(a,h)anthracene	0.7	0.7	4	4	**0.92**	0.41 U	**4.1**	NA	NA	**2.6**	**15**	**0.53**	2.3 U	0.33 U	0.35 U	0.29 U	NA	NA
	Fluoranthene	1,000	1,000	3,000	3,000	**19**	**3.0**	**48**	NA	NA	**17**	**290**	**5.3**	**19**	**3.4**	**0.43**	**1.4**	NA	NA
	Fluorene	1,000	1,000	3,000	3,000	**1.6**	0.41 U	**5.3**	NA	NA	**2.3**	**29**	**0.47**	**3.0**	0.33 U	0.35 U	0.29 U	NA	NA
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**4.0**	**1.3**	**14**	NA	NA	**10**	**53**	**2.0**	**6.9**	**0.73**	0.35 U	0.29 U	NA	NA
	2-Methylnaphthalene	80	300	80	500	0.86 U	0.41 U	1.32 U	NA	NA	2.0 U	**8.6**	0.41 U	2.3 U	**0.54**	0.35 U	0.29 U	NA	NA
	Phenanthrene	500	500	1,000	1,000	**16**	**2.6**	**44**	NA	NA	**20**	**250**	**4.2**	**27**	**3.4**	0.35 U	**0.98**	NA	NA
	Pyrene	1,000	1,000	3,000	3,000	**14**	**2.9**	**38**	NA	NA	**23**	**260**	**5.8**	**22**	**2.4**	0.35 U	**0.87**	NA	NA
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-28			SB-NM-28		SB-NM-29				SB-NM-30	SB-NM-31	SB-NM-32	SB-NM-33	
		Sample Depth (ft.):				0-1	1-3	5-7	0-1	1-3	0-1	1-3	5-7	13-14	0-1	0-1	0-1	0-1	1-3
		Sample Date:				3/24/2011	3/24/2011	3/24/2011 combo	06/08/2011	06/08/2011 combo	3/24/2011	3/24/2011	3/24/2011	3/24/2011	4/1/2011	4/1/2011	4/1/2011	06/08/2011	06/08/2011
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3														
PCBs																			
(mg/kg)	Total PCBs	1	1	4	4	**7.39 J**	**1.883 J**	**6.805 J**	**5.5**	**11.6**	**16.61 J**	**24.47 J**	**38.3 J**	**2.00 J**	**14.44 J**	**1.057 J**	**1.848 J**	**20.6**	**1.9**
TEQ Summation^																			
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	**1.2E-04**	**1.3E-04**	NA	NA	NA	NA	NA	NA	NA	**4.8E-04**	**7.4E-05**
Metals, total																			
(mg/kg)	Antimony	20	20	30	30	3.2 U	2.8 U	3.25 U	NA	NA	2.9 U	3.2 U	3.1 U	8.3 U	4.7 U	5.2 U	3.9 U	NA	NA
	Arsenic	20	20	20	20	**8.3**	**10**	**18.5**	NA	NA	**8.6**	**20**	**13**	**9.9**	**7.9**	**5.8**	**6.1**	NA	NA
	Barium	1,000	1,000	3,000	3,000	**1,100**	**430**	**560**	NA	NA	**850**	**1,400**	**770**	**720**	**650**	**96**	**260**	NA	NA
	Beryllium	90	90	200	200	0.32 U	0.28 U	0.325 U	NA	NA	0.29 U	**0.35**	0.31 U	0.83 U	0.47 U	0.52 U	0.39 U	NA	NA
	Cadmium	70	70	100	100	**13**	**1.7**	**5.05**	NA	NA	**3.7**	**5.3**	**4.1**	**1.2**	**1.9**	0.52 U	**0.80**	NA	NA
	Chromium (III)	1,000	1,000	3,000	3,000	**87**	**34**	**43**	NA	NA	**57**	**71**	**62**	**24**	**85**	**16**	**28**	NA	NA
	Chromium (VI)	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	200	200	600	600	**730**	**600**	**2,550**	NA	NA	**1,100**	**1,200**	**1,800**	**620**	**550**	**78**	**220**	NA	NA
	Mercury	20	20	30	30	**1.6**	**0.90**	**3**	NA	NA	**1.2**	**11**	**3.8**	**0.25**	**0.96**	**0.16**	**0.46**	NA	NA
	Nickel	600	600	1000	1000	**37**	**22**	**46.5**	NA	NA	**26**	**45**	**28**	**24**	**22**	**8.4**	**14**	NA	NA
	Selenium	400	400	700	700	6.3 U	5.7 U	19.35 U	NA	NA	5.9 U	6.4 U	6.1 U	17 U	9.5 U	10 U	7.9 U	NA	NA
	Silver	100	100	200	200	0.63 U	0.57 U	0.65 U	NA	NA	0.59 U	**16**	0.61 U	1.7 U	0.95 U	1.0 U	0.79 U	NA	NA
	Vanadium	400	400	700	700	**49**	**32**	**30.5**	NA	NA	**46**	**61**	**43**	**26**	**58**	**27**	**37**	NA	NA
	Zinc	1,000	1,000	3,000	3,000	**930**	**520**	**1,250**	NA	NA	**750**	**980**	**880**	**190**	**390**	**73**	**150**	NA	NA

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-34A	SB-NM-35	SB-NM-36		SB-NM-37	SB-NM-38		TRC TP-1			TRC TP-2	TRC TP-4	TRC TP-5		TRC TP-6	TRC TP-7	TRC TP-9		TRC TP-11
		Sample Depth (ft.):				0-1	0-1	0-1	1-3	0-1	0-1	1-3	8	8-9	9	9.5	5-7	3-5	5-8	4-5	0-3	3-5	5-7	7-9
		Sample Date:				6/10/2011	6/10/2011	6/10/2011	6/10/2011 combo	6/10/2011	7/6/2011	7/6/2011	10/25/2010	10/25/2010	10/25/2010	10/26/2010	10/27/2010	10/27/2010	10/27/2010	10/28/2010	10/28/2010	10/29/2010	10/29/2010	11/1/2010
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																			
VOCs																								
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0090 U	0.0060 U	0.0068 U	NA	0.0037 U
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0045 U	0.0030 U	0.0034 U	NA	0.0019 U
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0090 U	0.0060 U	0.0068 U	NA	0.0037 U
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0045 U	0.0030 U	0.0034 U	NA	0.0019 U
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0045 U	0.0030 U	0.0034 U	NA	0.0019 U
	Tetrachloroethylene	10	30	10	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0045 U	0.0030 U	0.0034 U	NA	0.0019 U
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0045 U	0.0030 U	0.0034 U	NA	**0.011**
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0045 U	**0.0084**	0.0034 U	NA	**0.0025**
VPH																								
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33 U	**25**	35 U	NA	**29**
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33 U	**25**	35 U	NA	**32**
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.21**	**3.8**	0.0034 U	NA	**0.13**
	Naphthalene	40	500	40	1,000	NA	0.25 U	0.37 U	0.465 U	0.20 U	0.39 U	0.38 U	NA	NA	NA	NA	0.26 U	NA	0.57 U	0.023 U	**2.9**	**2.9**	**5.6**	**0.74**
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0045 U	**1.5**	0.0034 U	NA	0.0019 U
	Xylenes	300	500	300	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.59**	**20**	**0.35**	NA	**0.67**
EPH																								
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26 U	NA	57 U	63 U	**18**	63 U	63 U	**66**
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**180**	NA	**380**	**760**	**41**	**580**	**560**	**810**
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**180**	NA	**310**	**370**	**460**	**840**	**780**	**360**
SVOCs																								
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	NA	0.25 U	0.37 U	**0.355 J**	**0.22**	0.39 U	0.38 U	NA	NA	NA	NA	**0.45**	NA	**0.71**	**0.65**	**6.1**	**6.3**	**8.2**	**0.50**
	Acenaphthylene	600	10	600	10	NA	0.25 U	0.37 U	0.465 U	0.20 U	0.39 U	0.38 U	NA	NA	NA	NA	0.26 U	NA	0.57 U	0.63 U	**0.51**	0.63 U	0.63 U	**0.66**
	Anthracene	1,000	1,000	3,000	3,000	NA	0.25 U	**0.44**	**1.4**	**0.59**	0.39 U	0.38 U	NA	NA	NA	NA	**0.82**	NA	**1.9**	**1.7**	**10**	**22**	**22**	**2.3**
	Benzo(a)anthracene	7	7	40	40	NA	**0.35**	**1.2**	**3.4**	**1.2**	**0.59**	0.38 U	NA	NA	NA	NA	**1.6**	NA	**5.3**	**2.5**	**22**	**37**	**28**	**6.0**
	Benzo(a)pyrene	2	2	4	4	NA	**0.33**	**1.0**	**2.5**	**0.96**	**0.60**	0.38 U	NA	NA	NA	NA	**2.4**	NA	**4.6**	**2.4**	**17**	**25**	**23**	**5.8**
	Benzo(b)fluoranthene	7	7	40	40	NA	**0.46**	**1.3**	**3.6**	**1.3**	**0.95**	**0.40**	NA	NA	NA	NA	**2.1**	NA	**6.5**	**3.3**	**25**	**36**	**30**	**7.2**
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	NA	0.25 U	**0.59**	**0.99**	**0.80**	0.39 U	0.38 U	NA	NA	NA	NA	**1.0**	NA	**2.9**	**1.9**	**11**	**13**	**14**	**3.6**
	Benzo(k)fluoranthene	70	70	400	400	NA	0.25 U	**0.49**	**1.2**	**0.46**	**0.40**	0.38 U	NA	NA	NA	NA	**0.62**	NA	**2.4**	**1.1**	**9.1**	**14**	**12**	**2.7**
	Chrysene	70	70	400	400	NA	**0.41**	**1.2**	**3.3**	**1.2**	**0.73**	0.38 U	NA	NA	NA	NA	**1.8**	NA	**5.5**	**2.6**	**25**	**36**	**28**	**6.2**
	Dibenz(a,h)anthracene	0.7	0.7	4	4	NA	0.25 U	0.37 U	0.465 U	**0.23**	0.39 U	0.38 U	NA	NA	NA	NA	**0.31**	NA	**0.99**	0.63 U	**3.5**	**5.8**	**6.1**	**1.0**
	Fluoranthene	1,000	1,000	3,000	3,000	NA	**0.75**	**2.1**	**5.7**	**2.6**	**1.3**	**0.60**	NA	NA	NA	NA	**3.9**	NA	**12**	**7.3**	**57**	**82**	**64**	**14**
	Fluorene	1,000	1,000	3,000	3,000	NA	0.25 U	0.37 U	**0.46 J**	**0.28**	0.39 U	0.38 U	NA	NA	NA	NA	**0.47**	NA	**1.1**	**0.84**	**7.0**	**13**	**13**	**0.83**
	Indeno(1,2,3-cd)pyrene	7	7	40	40	NA	**0.26**	**0.72**	**1.25**	**0.91**	0.39 U	0.38 U	NA	NA	NA	NA	**0.95**	NA	**3.3**	**1.8**	**11**	**15**	**15**	**3.6**
	2-Methylnaphthalene	80	300	80	500	NA	0.25 U	0.37 U	0.465 U	0.20 U	0.39 U	0.38 U	NA	NA	NA	NA	0.26 U	NA	0.57 U	0.63 U	**1.5**	**2.2**	**3.5**	0.24 U
	Phenanthrene	500	500	1,000	1,000	NA	**0.49**	**1.8**	**5.3**	**2.5**	**0.90**	**0.61**	NA	NA	NA	NA	**3.7**	NA	**7.5**	**5.1**	**54**	**82**	**74**	**9.7**
	Pyrene	1,000	1,000	3,000	3,000	NA	**0.60**	**2.3**	**5.3**	**2.4**	**0.85**	0.38 U	NA	NA	NA	NA	**3.9**	NA	**12**	**6.6**	**54**	**75**	**60**	**13**
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-34A	SB-NM-35	SB-NM-36		SB-NM-37	SB-NM-38		TRC TP-1			TRC TP-2	TRC TP-4	TRC TP-5		TRC TP-6	TRC TP-7	TRC TP-9		TRC TP-11
		Sample Depth (ft.):				0-1	0-1	0-1	1-3	0-1	0-1	1-3	8	8-9	9	9.5	5-7	3-5	5-8	4-5	0-3	3-5	5-7	7-9
		Sample Date:				6/10/2011	6/10/2011	6/10/2011	6/10/2011 combo	6/10/2011	7/6/2011	7/6/2011	10/25/2010	10/25/2010	10/25/2010	10/26/2010	10/27/2010	10/27/2010	10/27/2010	10/28/2010	10/28/2010	10/29/2010	10/29/2010	11/1/2010
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																			
PCBs																								
(mg/kg)	Total PCBs	1	1	4	4	**1.1**	**0.34**	**8.7**	**14**	**3.0**	**0.32**	**1.1**	0.0595 U	**1.423 J**	**1.585 J**	**0.933 J**	NA	**8.0**	NA	**61**	NA	**26**	NA	**11**
TEQ Summation^																								
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																								
(mg/kg)	Antimony	20	20	30	30	NA	3.7 U	2.8 U	3.4 U	3.0 U	2.8 U	2.6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	20	20	20	20	NA	**5.3**	**4.8**	**12**	**3.6**	2.8 U	2.6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	1,000	1,000	3,000	3,000	NA	**54**	**680**	**1,050**	**100**	**36**	**40**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	90	90	200	200	NA	0.37 U	0.28 U	0.34 U	0.30 U	0.28 U	0.26 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	70	70	100	100	NA	**0.46**	**1.7**	**3.1**	**0.74**	**0.31**	0.26 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium (III)	1,000	1,000	3,000	3,000	NA	**13**	**67**	**89**	**35**	**11**	**10**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium (VI)	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	200	200	600	600	NA	**50**	**480**	**740**	**220**	**41**	**47**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	20	20	30	30	NA	**0.19**	**0.82**	**1.3**	**0.38**	**0.064**	**0.13**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Nickel	600	600	1000	1000	NA	**7.3**	**17**	**25.5**	**9.7**	**7.7**	**7.5**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	400	400	700	700	NA	7.4 U	5.6 U	10.4 U	5.9 U	5.6 U	5.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	100	100	200	200	NA	0.74 U	0.56 U	0.68 U	0.59 U	0.56 U	0.52 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium	400	400	700	700	NA	**20**	**59**	**78**	**32**	**13**	**11**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	1,000	1,000	3,000	3,000	NA	**57**	**360**	**1,550**	**320**	**46**	**41**	NA	NA	NA	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.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				TRC TP-14			TRC TP-15			TRC TP-16			TRC TP-21	TRC TP-22			SB NM 40	SB NM 41
		Sample Depth (ft.):				0-1	1-3	3-5	3-5	5-7	7-9	0-1	1-3	3-5	7-9	0-1	1-3	3-5	0-1.5	0-1.5
		Sample Date:				11/2/2010	11/2/2010	11/2/2010	11/3/2010	11/3/2010	11/3/2010	11/3/2010	11/3/2010	11/3/2010	11/16/2010	11/17/2010	11/17/2010	11/17/2010	6/1/2012	6/1/2012
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3															
VOCs																				
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0016 U	0.0017 U
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0016 U	0.0017 U
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0016 U	0.0017 U
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0031 U	0.0035 U
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0016 U	0.0017 U
	Tetrachloroethylene	10	30	10	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0016 U	0.0017 U
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0016 U	0.0017 U
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0016 U	0.0017 U
VPH																				
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	28 U	NA	NA	NA	19 U	18 U
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	28 U	NA	NA	NA	19 U	18 U
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.14 U	NA	NA	NA	0.094 U	0.090 U
	Naphthalene	40	500	40	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.94**	NA	NA	NA	0.0031 U	0.0035 U
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.14 U	NA	NA	NA	0.094 U	0.090 U
	Xylenes	300	500	300	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.67**	NA	NA	NA	0.19 U	0.18 U
EPH																				
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	**29**	NA	NA	NA	25 U	24 U
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	**540**	NA	NA	NA	25 U	24 U
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	**610**	NA	NA	NA	**65**	24 U
SVOCs																				
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.83 U	0.42 U
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.83 U	0.42 U
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.83 U	0.42 U
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.83 U	0.42 U
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.83 U	0.42 U
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.6 U	0.81 U
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.83 U	0.42 U
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.83 U	0.42 U
	Acenaphthene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.8**	NA	NA	NA	**1.0**	0.21 U
	Acenaphthylene	600	10	600	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.20**	NA	NA	NA	0.25 U	0.21 U
	Anthracene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	**7.3**	NA	NA	NA	**1.6**	0.21 U
	Benzo(a)anthracene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	**14**	NA	NA	NA	**6.1**	**0.52**
	Benzo(a)pyrene	2	2	4	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	**10**	NA	NA	NA	**5.5**	**0.50**
	Benzo(b)fluoranthene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	**15**	NA	NA	NA	**7.1**	**0.63**
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	**7.0**	NA	NA	NA	**2.3**	**0.29**
	Benzo(k)fluoranthene	70	70	400	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5.5**	NA	NA	NA	**2.7**	**0.27**
	Chrysene	70	70	400	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	**13**	NA	NA	NA	**6.3**	**0.56**
	Dibenz(a,h)anthracene	0.7	0.7	4	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.1**	NA	NA	NA	**0.64**	0.21 U
	Fluoranthene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	**34**	NA	NA	NA	**13**	**1.1**
	Fluorene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3.8**	NA	NA	NA	**0.70**	0.21 U
	Indeno(1,2,3-cd)pyrene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	**7.5**	NA	NA	NA	**3.2**	**0.32**
	2-Methylnaphthalene	80	300	80	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.48**	NA	NA	NA	0.25 U	0.21 U
	Phenanthrene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	**30**	NA	NA	NA	**9.3**	**0.62**
	Pyrene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	**31**	NA	NA	NA	**9.0**	**0.98**
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				TRC TP-14			TRC TP-15			TRC TP-16			TRC TP-21	TRC TP-22			SB NM 40	SB NM 41
		Sample Depth (ft.):				0-1	1-3	3-5	3-5	5-7	7-9	0-1	1-3	3-5	7-9	0-1	1-3	3-5	0-1.5	0-1.5
		Sample Date:				11/2/2010	11/2/2010	11/2/2010	11/3/2010	11/3/2010	11/3/2010	11/3/2010	11/3/2010	11/3/2010	11/16/2010	11/17/2010	11/17/2010	11/17/2010	6/1/2012	6/1/2012
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3															
PCBs																				
(mg/kg)	Total PCBs	1	1	4	4	**16**	**50**	**17**	**4.3**	**1.9**	**5.3**	**27**	**23**	**14**	NA	**21**	**6.1**	**2.5**	**0.19**	**0.32**
TEQ Summation^																				
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																				
(mg/kg)	Antimony	20	20	30	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.9 U	2.9 U
	Arsenic	20	20	20	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**110**	**86**
	Beryllium	90	90	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	70	70	100	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.50**	**0.56**
	Chromium (III)	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**13**	**14**
	Chromium (VI)	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	200	200	600	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**290**	**370**
	Mercury	20	20	30	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.38**	**0.13**
	Nickel	600	600	1000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	400	400	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.8 U	5.8 U
	Silver	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.58 U	**0.61**
	Vanadium	400	400	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	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.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB NM 42	SB NM 43	P-021-EW1	P-029_EW1	P-029-EW2
		Sample Depth (ft.):				0-1.5	0-1	0-3	0-3	0-3
		Sample Date:				6/1/2012	6/1/2012	12/15/2010	11/23/2010	12/15/2010
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3		combo			
VOCs										
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	0.0017 U	0.00175 U	NA	NA	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	0.0017 U	0.00175 U	NA	NA	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	0.0017 U	0.00175 U	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	0.0034 U	0.0035 U	NA	NA	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	0.0017 U	0.00175 U	NA	NA	NA
	Tetrachloroethylene	10	30	10	200	0.0017 U	0.00175 U	NA	NA	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	0.0017 U	0.00175 U	NA	NA	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	0.0017 U	0.00175 U	NA	NA	NA
VPH										
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	18 U	15 U	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	18 U	15 U	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	0.091 U	0.075 U	NA	NA	NA
	Naphthalene	40	500	40	1,000	0.0034 U	**0.33 J**	**4.7**	**4.4**	**5.8**
	Toluene	500	500	1,000	1,000	0.091 U	0.075 U	NA	NA	NA
	Xylenes	300	500	300	1,000	0.18 U	0.15 U	NA	NA	NA
EPH										
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	66 U	99 U	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	66 U	99 U	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	**160**	**165**	NA	NA	NA
SVOCs										
(mg/kg)	Phenol	50	20	50	20	0.89 U	0.78 U	NA	1.40 U	NA
	2-Methylphenol	NS	NS	NS	NS	0.89 U	0.78 U	NA	1.40 U	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	0.89 U	0.78 U	NA	1.40 U	NA
	2,4-Dinitrotoluene	2	2	10	10	0.89 U	0.78 U	NA	1.40 U	NA
	Di-n-butylphthalate	NS	NS	NS	NS	0.89 U	0.78 U	NA	1.40 U	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	1.7 U	1.5 U	NA	1.40 U	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	0.89 U	0.78 U	NA	**3.2**	NA
	Dibenzofuran	10*	10*	NS	NS	0.89 U	0.78 U	NA	**7.7**	NA
	Acenaphthene	1,000	1,000	3,000	3,000	**2.3**	**1.65**	**10**	**11**	**29**
	Acenaphthylene	600	10	600	10	0.44 U	0.39 U	**0.65**	1.40 U	2.7 U
	Anthracene	1,000	1,000	3,000	3,000	**2.2**	**1.85**	**19**	**23**	**71**
	Benzo(a)anthracene	7	7	40	40	**7.6**	**5.5**	**36**	**103**	**220**
	Benzo(a)pyrene	2	2	4	4	**5.9**	**4.6**	**39**	**92**	**210**
	Benzo(b)fluoranthene	7	7	40	40	**8.5**	**6.45**	**32**	**88.6**	**190**
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**3.4**	**2.8**	**28**	**26**	**150**
	Benzo(k)fluoranthene	70	70	400	400	**3.6**	**2.65**	**40**	**45**	**55**
	Chrysene	70	70	400	400	**8.0**	**5.65**	**36**	**109**	**220**
	Dibenz(a,h)anthracene	0.7	0.7	4	4	**1.2**	**0.94**	**7.1**	1.40 U	**15**
	Fluoranthene	1,000	1,000	3,000	3,000	**17**	**12**	**84**	**257**	**510**
	Fluorene	1,000	1,000	3,000	3,000	**1.1**	**0.87**	**8.8**	**11**	**21**
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**3.6**	**2.75**	**27**	**29**	**140**
	2-Methylnaphthalene	80	300	80	500	0.44 U	0.39 U	NA	**2.4**	NA
	Phenanthrene	500	500	1,000	1,000	**12**	**8.9**	**63**	**174**	**320**
	Pyrene	1,000	1,000	3,000	3,000	**15**	**10.9**	**65**	**200**	**380**
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	**1.60**	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	**19**	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	**1.70**	NA

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB NM 42	SB NM 43	P-021-EW1	P-029_EW1	P-029-EW2
		Sample Depth (ft.):				0-1.5	0-1	0-3	0-3	0-3
		Sample Date:				6/1/2012	6/1/2012	12/15/2010	11/23/2010	12/15/2010
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3		combo			
PCBs										
(mg/kg)	Total PCBs	1	1	4	4	**0.17**	**0.20**	5.0 U	10 U	20 U
TEQ Summation^										
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA
Metals, total										
(mg/kg)	Antimony	20	20	30	30	3.2 U	2.85 U	NA	NA	NA
	Arsenic	20	20	20	20	NA	NA	14 U	15 U	15 U
	Barium	1,000	1,000	3,000	3,000	**70**	**58**	**334**	**398**	**255**
	Beryllium	90	90	200	200	NA	NA	NA	NA	NA
	Cadmium	70	70	100	100	**0.56**	**0.315**	8.0 U	8.0 U	8.0 U
	Chromium (III)	1,000	1,000	3,000	3,000	**15**	**15.5**	**25**	**17**	28 U
	Chromium (VI)	100	100	200	200	NA	NA	NA	NA	NA
	Lead	200	200	600	600	**250**	**145**	**271**	**312**	**336**
	Mercury	20	20	30	30	**0.19**	**0.205**	NA	NA	NA
	Nickel	600	600	1000	1000	NA	NA	NA	NA	NA
	Selenium	400	400	700	700	6.3 U	5.7 U	NA	NA	NA
	Silver	100	100	200	200	0.63 U	0.57 U	NA	NA	NA
	Vanadium	400	400	700	700	NA	NA	NA	NA	NA
	Zinc	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 2. Summary Statistics for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-2	S-1/GW-3	UCL*	Background	# of Samples	# of Detects	Freq. of Detects	Min. of Detects (mg/kg)	Max. of Detects (mg/kg)	Location of Max. Detected	Min. of Non-Detects (mg/kg)	Max. of Non-Detects (mg/kg)	Mean Concentration (mg/kg)	EPC (mg/kg)	EPC Rationale
VOCs																
	n-Butylbenzene	100(1)	100(1)	5,000(1)	NA	13	2	15.4%	0.015	67	SB-NM-7	0.0016	0.6	5.2E+00	6.7E+01	Maximum detect
	sec-Butylbenzene	100(1)	100(1)	5,000(1)	NA	13	2	15.4%	0.0055	22	SB-NM-7	0.0016	0.6	1.7E+00	2.2E+01	Maximum detect
	Isopropylbenzene (Cumene)	100(1)	100(1)	5,000(1)	NA	13	1	7.7%	5	5	SB-NM-7	0.0016	1.2	4.3E-01	5.0E+00	Maximum detect
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	5,000(1)	NA	13	2	15.4%	0.0093	37	SB-NM-7	0.0019	0.6	2.9E+00	3.7E+01	Maximum detect
	n-Propylbenzene	100(1)	100(1)	5,000(1)	NA	13	1	7.7%	10	10	SB-NM-7	0.0016	0.6	7.9E-01	1.0E+01	Maximum detect
	Tetrachloroethylene	10	30	10,000	NA	13	1	7.7%	0.0073	0.0073	SB-NM-7A	0.0016	3.4	1.6E-01	7.3E-03	Maximum detect
	1,2,4-Trimethylbenzene	100(1)	100(1)	5,000(1)	NA	13	4	30.8%	0.011	150	SB-NM-7	0.0016	0.0045	1.2E+01	1.5E+02	Maximum detect
	1,3,5-Trimethylbenzene	100(1)	100(1)	5,000(1)	NA	13	4	30.8%	0.0025	250	SB-NM-7	0.0016	2.4	1.9E+01	2.5E+02	Maximum detect
VPH																
	C9-C12 Aliphatics	1,000	1,000	20,000	NA	9	2	22.2%	25	29	TRC TP-11	15	35	1.5E+01	1.5E+01	Mean
	C9-C10 Aromatics	100	100	5,000	NA	9	2	22.2%	25	32	TRC TP-11	15	35	1.6E+01	1.6E+01	Mean
	Ethylbenzene	500	500	10,000	NA	14	3	21.4%	0.13	3.8	TRC TP-7	0.00205	3.4	4.6E-01	4.6E-01	Mean
	Naphthalene	20	500	10,000	0.5	143	46	32.2%	0.015	180	SB-NM-15	0.0031	3.6	2.7E+00	1.8E+02	Maximum detect
	Toluene	500	500	10,000	NA	14	1	7.1%	1.5	1.5	TRC TP-7	0.0019	3.4	2.7E-01	2.7E-01	Mean
	Xylenes	100	500	10,000	NA	14	6	42.9%	0.35	19.5	TRC TP-7	0.0041	1.2	1.9E+00	1.9E+00	Mean
EPH																
	C9-C18 Aliphatics	1,000	1,000	20,000	NA	12	3	25.0%	18	66	TRC TP-11	24	99	3.0E+01	3.0E+01	Mean
	C19-C36 Aliphatics	3,000	3,000	20,000	NA	12	8	66.7%	41	810	TRC TP-11	24	99	3.3E+02	3.3E+02	Mean
	C11-C22 Aromatics	1,000	1,000	10,000	NA	12	11	91.7%	65	840	TRC TP-9	24	24	3.6E+02	3.6E+02	Mean
SVOCs																
	2,4-Dimethylphenol	100	500	10,000	NA	7	1	14.3%	0.26	0.26	Bethel-2	0.42	8.45	9.5E-01	2.6E-01	Maximum detect
	Di-n-butylphthalate	NS	NS	NS	NA	6	1	16.7%	6	6	Bethel-3	0.42	1.4	1.4E+00	6.0E+00	Maximum detect
	Butyl benzyl phthalate	NS	NS	NS	NA	6	1	16.7%	0.067	0.067	Bethel-3	0.81	1.7	6.0E-01	6.7E-02	Maximum detect
	bis(2-Ethylhexyl)phthalate	90	90	10,000	NA	6	2	33.3%	3.2	3.4	Bethel-1	0.42	0.89	1.3E+00	1.3E+00	Mean
	Dibenzofuran	10*	10*	NS	NA	8	4	50.0%	1	14	Bethel-2	0.42	0.89	4.2E+00	1.4E+01	Maximum detect
	Acenaphthene	1,000	1,000	10,000	0.5	138	58	42.0%	0.11	29	P-029-EW2	0.19	3.6	1.8E+00	1.8E+00	Mean
	Acenaphthylene	600	10	10,000	0.5	138	20	14.5%	0.091	13	Bethel-2	0.088	4.3	6.5E-01	6.5E-01	Mean
	Anthracene	1,000	1,000	10,000	1	139	100	71.9%	0.23	71	P-029-EW2	0.19	3.6	4.5E+00	4.5E+00	Mean
	Benzo(a)anthracene	7	7	3,000	2	139	119	85.6%	0.22	220	P-029-EW2	0.19	3.6	1.0E+01	1.5E+01	95% H-UCL
	Benzo(a)pyrene	2	2	300	2	139	120	86.3%	0.25	210	P-029-EW2	0.19	3.6	8.8E+00	1.2E+01	95% H-UCL
	Benzo(b)fluoranthene	7	7	3,000	2	139	124	89.2%	0.32	190	P-029-EW2	0.19	3.6	1.1E+01	1.6E+01	95% H-UCL
	Benzo(g,h,i)perylene	1,000	1,000	10,000	1	138	107	77.5%	0.25	150	P-029-EW2	0.19	3.6	4.5E+00	4.5E+00	Mean
	Benzo(k)fluoranthene	70	70	10,000	1	138	110	79.7%	0.23	55	P-029-EW2	0.19	3.6	4.0E+00	4.0E+00	Mean
	Chrysene	70	70	10,000	2	139	120	86.3%	0.23	220	P-029-EW2	0.19	3.6	1.0E+01	1.0E+01	Mean
	Dibenz(a,h)anthracene	0.7	0.7	300	0.5	137	58	42.3%	0.1825	15	SB-NM-29	0.088	3.6	1.1E+00	2.0E+00	95% Chebyshev (Mean, Sd) UCL
	Fluoranthene	1,000	1,000	10,000	4	139	127	91.4%	0.19	510	P-029-EW2	0.2	1.4	2.3E+01	2.3E+01	Mean
	Fluorene	1,000	1,000	10,000	1	138	73	52.9%	0.089	29	SB-NM-29	0.19	3.6	2.2E+00	2.2E+00	Mean
	Indeno(1,2,3-cd)pyrene	7	7	3000	1	138	114	82.6%	0.21	140	P-029-EW2	0.19	3.6	5.2E+00	6.5E+00	95% H-UCL
	2-Methylnaphthalene	80	300	5,000	0.5	135	26	19.3%	0.38	9	NM-ROW-3	0.088	3.6	7.2E-01	7.2E-01	Mean
	Phenanthrene	500	500	10,000	3	139	124	89.2%	0.22	320	P-029-EW2	0.19	1.4	2.0E+01	2.0E+01	Mean
	Pyrene	1,000	1,000	10,000	4	139	122	87.8%	0.28	380	P-029-EW2	0.11	3.6	1.9E+01	1.9E+01	Mean
	3-Methylcholanthrene	NS	NS	NS	NA	1	1	100.0%	1.60	1.60	P-029_EW1	--	--	1.6E+00	1.6E+00	Maximum detect
	Carbazole	NS	NS	NS	NA	1	1	100.0%	19	19	P-029_EW1	--	--	1.9E+01	1.9E+01	Maximum detect
	1-Methylnaphthalene	NS	NS	NS	NA	1	1	100.0%	1.70	1.70	P-029_EW1	--	--	1.7E+00	1.7E+00	Maximum detect
PCBs																
	Total PCBs	1	1	100	NA	177	170	96.0%	0.0742	92.9	SB-NM-11	0.0586	20	1.5E+01	1.7E+01	95% Approximate Gamma UCL
TEQ Summation^																
	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	3.0E-03	NA	16	16	100.0%	6.4E-05	7.4E-04	SB-NM-20	--	--	3.3E-04	4.2E-04	95% Student's-t UCL
Metals, total																
	Antimony	20	20	300	1	122	20	16.4%	3.075	17	SB-NM-23	2.6	12	2.7E+00	2.7E+00	Mean
	Arsenic	20	20	500	20	127	100	78.7%	1.81	31	SB-NM-12	2.6	15	9.8E+00	9.8E+00	Mean
	Barium	1,000	1,000	10,000	50	131	131	100.0%	15	7300	SB-NM-6	--	--	8.9E+02	1.0E+03	95% Approximate Gamma UCL
	Beryllium	90	90	2,000	0.4	118	40	33.9%	0.2625	2.7	SB-NM-13	0.26	1.2	4.6E-01	4.6E-01	Mean
	Cadmium	70	70	1000	2	132	116	87.9%	0.3	20	SB-NM-18	0.26	8	3.2E+00	3.2E+00	Mean
	Chromium (III)	1,000	1,000	10,000	30	137	136	99.3%	2.8	740	SB-NM-6	28	28	1.0E+02	1.0E+02	Mean
	Chromium (VI)	100	100	2000	30	4	4	100.0%	7.85	26	SB-NM-7	--	--	1.6E+01	NA	Below background
	Lead	200	200	6,000	100	132	132	100.0%	5.9	13000	SB-NM-13	--	--	1.1E+03	1.7E+03	95% Chebyshev (Mean, Sd) UCL
	Mercury	20	20	300	0.3	128	124	96.9%	0.0094	20	SB-NM-23	0.01	0.11	1.1E+00	1.1E+00	Mean
	Nickel	600	600	10,000	20	119	119	100.0%	1.5	190	SB-NM-4	--	--	3.6E+01	3.6E+01	Mean
	Selenium	400	400	7,000	0.5	111	3	2.7%	0.74	6.9	SB-NM-14	0.12	78	5.1E+00	5.1E+00	Mean
	Silver	100	100	2,000	0.6	125	13	10.4%	0.37	16	SB-NM-29	0.06	7.8	8.4E-01	8.4E-01	Mean
	Vanadium	400	400	7,000	30	118	118	100.0%	5.3	300	SB-NM-23	--	--	6.8E+01	6.8E+01	Mean
	Zinc	1,000	1,000	10,000	100	118	118	100.0%	12	1700	SB-NM-5	--	--	6.5E+02	6.5E+02	Mean

Notes:

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

NS - No MassDEP standards exist for this analyte.

NA - Not applicable.

Boxed maxima exceed natural soil background.

VOCs - Volatile Organic Compounds.

EPH - Extractable Petroleum Hydrocarbons.

VPH - Volatile Petroleum Hydrocarbons.

SVOCs - Semi-Volatile Organic Compounds.

PCBs - Polychlorinated Biphenyls.

(1) Standard for C9-C10 aliphatics used.

EPC - Exposure Point Concentration.

UCL* - Upper concentration limit.

UCL - Upper confidence limit.

* - Background Concentration for natural soil.

EMPCs - Estimated Maximum Possible Concentrations.

TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.

Table 3. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	A1-0.5-3'	A13-0.5-3.6'	A14-0.5-4.7'	A18-0.5-3.6'	A5-A-2.5-3.5	A5-A-3.5-4.5	A5-C-2.5-3.5'	A5-C-3.5-4.5'	A5-H-4.5-5.5'	A5-I-2.5-3.5'	A5-I-3.5-4.5'	A5-J-3.5-4.5'	A5-K-3.5-4.5'	A5-L-3.5-4.5'	A6-0.5-1.75'	A7-0.5-1.6	A8-0.5-1.6'	A9-0.5-1.6'	B1-0.5-1.1'	B8-0.5-0.6'	B9-0.5-0.7	C1-0.5-0.6'	C5-0.5-0.6'
		Sample Depth (ft.):	0.5-3	0.5-3.6	0.5-4.7	0.5-3.6	2.5-3.5	3.5-4.5	2.5-3.5	3.5-4.5	4.5-5.5	2.5-3.5	3.5-4.5	3.5-4.5	3.5-4.5	3.5-4.5	0.5-1.75	0.5-1.6	0.5-1.6	0.5-1.6	0.5-1.1	0.5-0.6	0.5-0.7	0.5-0.6	0.5-0.6
		Sample Date:	10/12/2004	10/12/2004	10/12/2004	10/12/2004	12/3/2004	12/3/2004	12/3/2004	12/3/2004	12/28/2004	12/28/2004	12/28/2004	1/11/2005	1/11/2005	1/11/2005	10/12/2004	10/12/2004	10/12/2004	10/12/2004	10/12/2004	10/12/2004	10/12/2004	10/12/2004	10/12/2004
		UCL																							
VOCs																									
(mg/kg)	Acetone	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Butanone (MEK)	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	cis-1,2-Dichloroethylene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Trichloroethylene	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	m+p Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	o-Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PAHs																									
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																									
(mg/kg)	Total PCBs	100	**20.2**	**3.65**	**12.6**	**23.2**	**64.1**	**3.87**	**2.23**	**7.23**	**55**	1.16 U	**74.1**	**8.55**	**18.1**	**55.1**	1.96 U	1.96 U	**4.43**	1.87 U	1.81 U	**6.19**	**9.03**	**4.56**	**13.3**
Pesticides																									
(mg/kg)	alpha-BHC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Heptachlor epoxide	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																									
(mg/kg)	Arsenic	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
NA - Sample not analyzed for the listed analyte.
ND - Not detected; quantitation limit not available in historical data.
NS - No MassDEP standards exist for this analyte.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
PAHs - Polyaromatic Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
UCL - Upper concentration limit.
(1) - MCP UCL for C9-C10 aromatics used.

Table 3. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	C6-0.5-1	C7-0.5-1	C8-0.5-1.25'	C9-0.5-1.7'	D1-0.5-0.75	D10-0.5-2.2	D18-0.5-1.1	D5-0.5-0.8	D6-0.5-1.1	D7-0.5-1.15	D8-0.5-1.45	D9-0.5-1.9	DB 1-1-4'	DB 3-1-4'	DB 4-1-4'	DB 6-1-4'	DB 7-1-4'	DB 8-1-3'	DB 8-3-6'	DB 8-6-9'	DB12-1-4'	DB13-1-4'
		Sample Depth (ft.):	0.5-1	0.5-1	0.5-1.25	0.5-1.7	0.5-0.75	0.5-2.2	0.5-1.1	0.5-0.8	0.5-1.1	0.5-1.15	0.5-1.45	0.5-1.9	1-4	1-4	1-4	1-4	1-4	1-3	3-6	6-9	1-4	1-4
		Sample Date:	10/12/2004	10/12/2004	10/12/2004	10/12/2004	12/28/2004	12/28/2004	10/12/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	8/3/2004	8/3/2004	8/3/2004	8/3/2004	8/3/2004	8/3/2004	8/3/2004	8/3/2004	8/4/2004	8/3/2004
		UCL																						
VOCs																								
(mg/kg)	Acetone	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Butanone (MEK)	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	cis-1,2-Dichloroethylene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Trichloroethylene	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	m+p Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	o-Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PAHs																								
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																								
(mg/kg)	Total PCBs	100	**14.5**	**15.5**	**9.34**	**13.5**	**1.34**	**11.7**	**5.29**	**8.22**	**5.47**	**10.7**	**7.74**	**6.05**	**6.63**	**10.4**	**4.62**	**2.5**	**8.84**	**8.18**	**7.49**	1.2 U	**23.9**	**4.62**
Pesticides																								
(mg/kg)	alpha-BHC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Heptachlor epoxide	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																								
(mg/kg)	Arsenic	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
NA - Sample not analyzed for the listed analyte.
ND - Not detected; quantitation limit not available in historical data.
NS - No MassDEP standards exist for this analyte.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
PAHs - Polyaromatic Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
UCL - Upper concentration limit.
(1) - MCP UCL for C9-C10 aromatics used.

Table 3. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	DB14-1-3'	DB14-3-6'	DB14-6-9'	DB14-Comp	DB18-1-4'	DB19-1-4'	DB20-1-3'	DB20-3-6'	DB20-6-9'	DB20-Comp	DB24-1-4'	DB25-1-4'	DB26-B-1-3'	DB26-B-3-6'	DB26-C-1-3'	DB26-C-3-6'	DB26-C-6-9'	DB26-D-1-3'	DB26-D-3-6'	DB26-D-6-9'	DB26-F-3-6'	DB26-F-6-13'	DB26-G-3-6'
		Sample Depth (ft.):	1-3	3-6	6-9	1-9	1-4	1-4	1-3	3-6	6-9	1-9	1-4	1-4	1-3	3-6	1-3	3-6	6-9	1-3	3-6	6-9	3-6	6-13	3-6
		Sample Date:	8/3/2004	8/3/2004	8/3/2004	8/3/2004	8/4/2004	8/3/2004	8/3/2004	8/3/2004	8/3/2004	8/3/2004	8/4/2004	8/3/2004	9/9/2004	9/9/2004	9/9/2004	9/9/2004	9/9/2004	9/9/2004	9/9/2004	9/9/2004	9/22/2004	9/22/2004	9/22/2004
		UCL																							
VOCs																									
(mg/kg)	Acetone	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Butanone (MEK)	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	cis-1,2-Dichloroethylene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Trichloroethylene	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	m+p Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	o-Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PAHs																									
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																									
(mg/kg)	Total PCBs	100	**21.1**	**7.82**	**1.19**	**9.08**	**19.5**	**7.83**	**4.9**	**38.1**	**2.49**	**3.16**	**23.5**	**10.9**	19.2 U	21.6 U	18.7 U	24.2 U	22.2 U	**20.1**	23.1 U	20.8 U	**4.13**	**7.81**	**5.41**
Pesticides																									
(mg/kg)	alpha-BHC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Heptachlor epoxide	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																									
(mg/kg)	Arsenic	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
NA - Sample not analyzed for the listed analyte.
ND - Not detected; quantitation limit not available in historical data.
NS - No MassDEP standards exist for this analyte.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
PAHs - Polyaromatic Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
UCL - Upper concentration limit.
(1) - MCP UCL for C9-C10 aromatics used.

Table 3. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	DB26-G-6-12.5'	DB26-H-3-6'	DB26-H-6-11	DB30-1-4'	DB31-1-4'	DB32-B-1-3'	DB32-B-3-6	DB32-C-1-3'	DB32-C-3-6'	DB32-D-1-3	DB32-D-3-6'	DB36-1-4'	DB37-1-4'	DB38-1-3'	DB38-3-6'	DB38-6-9'	DB42-1-4'	DB43-1-4'	DB44-1-3'	DB44-3-6'	DB44-6-9'	DB48-1-4'	DB49-1-4'	DB50-1-3'	DB50-3-6'	DB50-6-9'
		Sample Depth (ft.):	6-12.5	3-6	6-11	1-4	1-4	1-3	3-6	1-3	3-6	1-3	3-6	1-4	1-4	1-3	3-6	6-9	1-4	1-4	1-3	3-6	6-9	1-4	1-4	1-3	3-6	6-9
		Sample Date:	9/22/2004	9/22/2004	9/22/2004	8/4/2004	8/3/2004	9/9/2004	9/9/2004	9/9/2004	9/9/2004	9/9/2004	9/9/2004	8/4/2004	8/3/2004	8/3/2004	8/3/2004	8/3/2004	8/4/2004	8/3/2004	8/3/2004	8/3/2004	8/3/2004	9/8/2004	8/3/2004	8/3/2004	8/3/2004	8/3/2004
		UCL																										
VOCs																												
(mg/kg)	Acetone	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Butanone (MEK)	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	cis-1,2-Dichloroethylene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Trichloroethylene	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	m+p Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	o-Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PAHs																												
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																												
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																												
(mg/kg)	Total PCBs	100	**2.41**	**8.16**	**11.2**	**9.45**	**7.01**	18.9 U	24.2 U	19.6 U	**24.8**	19.4 U	23.1 U	**5.86**	**32.1**	**2.46**	**26.5**	**5.25**	**7.91**	**36.7**	**1.46**	**38.2**	**29**	**24.9**	**7.23**	**22.8**	**1.91**	**4.15**
Pesticides																												
(mg/kg)	alpha-BHC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Heptachlor epoxide	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																												
(mg/kg)	Arsenic	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
NA - Sample not analyzed for the listed analyte.
ND - Not detected; quantitation limit not available in historical data.
NS - No MassDEP standards exist for this analyte.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
PAHs - Polyaromatic Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
UCL - Upper concentration limit.
(1) - MCP UCL for C9-C10 aromatics used.

Table 3. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	DB50-Comp	DB51-1-3'	DB51-3-6'	DB51-6-9'	DB52-1-4'	DB52-4-7'	DB52-7-10.5'	DB52-A-1-3'	DB52-A-3-6'	DB52-A-6-10'	DB52-B-1-3'	DB52-B-3-6'	DB52-B-6-10'	DB52-C-1-3'	DB52-C-3-6'	DB52-C-6-9.5	DB52-D-1-3'	DB52-D-3-6'	DB52-D-6-9.5	DB54-1-4'	DB55-1-4'	DB56-1-4'	DB57-1-4'	DB58-1-4'	DB59 C-1-3	DB59 C-3-6	DB59 C-6-10
		Sample Depth (ft.):	1-9	1-3	3-6	6-9	1-4	4-7	7-10.5	1-3	3-6	6-10	1-3	3-6	6-10	1-3	3-6	6-9.5	1-3	3-6	6-9.5	1-4	1-4	1-4	1-4	1-4	1-3	3-6	6-10
		Sample Date:	8/3/2004	8/3/2004	8/3/2004	8/3/2004	9/8/2004	9/8/2004	9/8/2004	9/14/2004	9/14/2004	9/14/2004	9/14/2004	9/14/2004	9/14/2004	9/14/2004	9/14/2004	9/14/2004	9/14/2004	9/14/2004	9/14/2004	9/8/2004	8/3/2004	8/3/2004	8/3/2004	9/8/2004	9/20/2004	9/20/2004	9/20/2004
		UCL																											
VOCs																													
(mg/kg)	Acetone	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Butanone (MEK)	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	cis-1,2-Dichloroethylene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Trichloroethylene	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	m+p Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	o-Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PAHs																													
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																													
(mg/kg)	Total PCBs	100	**5.9**	**3.5**	**3.75**	**8.91**	**7.56**	**23.4**	24.2 U	19.4 U	21.6 U	21.6 U	18.5 U	**32.5**	21.4 U	20.1 U	20.3 U	24.2 U	18.7 U	21.6 U	23.5 U	**34.2**	**6.96**	**2.94**	**7.86**	**15.4**	**22.9**	**8.63**	**22.2**
Pesticides																													
(mg/kg)	alpha-BHC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Heptachlor epoxide	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																													
(mg/kg)	Arsenic	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
NA - Sample not analyzed for the listed analyte.
ND - Not detected; quantitation limit not available in historical data.
NS - No MassDEP standards exist for this analyte.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
PAHs - Polyaromatic Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
UCL - Upper concentration limit.
(1) - MCP UCL for C9-C10 aromatics used.

Table 3. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	DB5-A-1-3'	DB5-C-1-3'	DB5-D-1-3'	DB5-D-3-6'	DB5-D-6-11.5	DB5-E-10-12'	DB5-E-1-3'	DB5-E-3-6'	DB5-E-6-10'	DB5-F-10-11.5	DB5-F-1-3'	DB5-F-3-6'	DB5-F-6-10'	DB5-G-1-3'	DB5-G-6-10.5	DB5-K-10-12'	DB5-K-1-3'	DB5-K-3-6'	DB5-K-6-10'	DB5-L-10-11.5	DB5-L-1-3'	DB5-L-3-6'	DB5-L-6-10'	DB5-M-10-12	DB5-M-1-3'	DB5-M-3-6'	DB5-M-6-10'
		Sample Depth (ft.):	1-3	1-3	1-3	3-6	6-11.5	10-12	1-3	3-6	6-10	10-11.5	1-3	3-6	6-10	1-3	6-10.5	10-12	1-3	3-6	6-10	10-11.5	1-3	3-6	6-10	10-12	1-3	3-6	6-10
		Sample Date:	9/14/2004	9/14/2004	9/14/2004	9/14/2004	9/14/04	9/29/04	9/29/04	9/29/04	9/29/04	9/29/04	9/29/04	9/29/04	9/29/04	9/30/04	9/30/04	9/30/04	9/30/04	9/30/04	9/30/04	9/30/04	9/30/04	9/30/04	9/30/04	9/30/04	9/29/2004	9/29/2004	9/29/04	9/29/04
		UCL																											
VOCs																													
(mg/kg)	Acetone	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Butanone (MEK)	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	cis-1,2-Dichloroethylene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Trichloroethylene	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	m+p Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	o-Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PAHs																													
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																													
(mg/kg)	Total PCBs	100	18.9 U	19.4 U	19.6 U	22.2 U	**12.9**	1.34 U	**5.61**	**5.92**	1.35 U	**1.82**	**11.3**	**49.1**	1.6 U	**4.1**	1.5 U	2.08 U	**13.6**	**5.42**	**27.6**	1.47 U	**7.74**	**8.44**	**7.24**	**1.52**	**8.47**	**70.6**	**38.6**
Pesticides																													
(mg/kg)	alpha-BHC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Heptachlor epoxide	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																													
(mg/kg)	Arsenic	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
NA - Sample not analyzed for the listed analyte.
ND - Not detected; quantitation limit not available in historical data.
NS - No MassDEP standards exist for this analyte.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
PAHs - Polyaromatic Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
UCL - Upper concentration limit.
(1) - MCP UCL for C9-C10 aromatics used.

Table 3. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	DB60-1-4'	DB8-Comp	DL18-1-3'	DL18-3-6'	DL19-1-3'	DL19-3-6'	DL20-1-3'	DL20-3-6'	DL22-1-3'	DL22-3-6'	DL35-1-4'	DL36-1-4'	DL36-4-8'	DL36-4-8'	E1-0.5-0.8	E10-0.5-1.9	E13-0.5-2.4	E14-0.5-1.25	E15-0.5-2.5	E5-0.5-0.85	E6-0.5-0.9	E7-0.5-1.2	E8-0.5-1.25	E9-0.5-1.5	F13-0.5-1.4	F14-0.5-1.5	F15-0.5-1
		Sample Depth (ft.):	1-4	1-9	1-3	3-6	1-3	3-6	1-3	3-6	1-3	3-6	1-4	1-4	4-8	4-8	0.5-0.8	0.5-1.9	0.5-2.4	0.5-1.25	0.5-2.5	0.5-0.85	0.5-0.9	0.5-1.2	0.5-1.25	0.5-1.5	0.5-1.4	0.5-1.5	0.5-1
		Sample Date:	9/8/04	8/3/04	8/11/04	8/11/04	8/11/04	8/11/04	8/11/04	8/11/2004	8/11/04	8/11/04	8/11/04	8/11/04	8/11/04	8/11/04	12/28/2004	12/28/2004	12/28/2004	10/14/2004	10/14/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	10/14/2004	10/14/2004
		UCL																											
VOCs																													
(mg/kg)	Acetone	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Butanone (MEK)	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	cis-1,2-Dichloroethylene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Trichloroethylene	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	m+p Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	o-Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PAHs																													
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																													
(mg/kg)	Total PCBs	100	**28.5**	**4.25**	**5.1**	**3.33**	**4**	**8.4**	**21**	**5.825**	**26**	1.28 U	**33.8**	**8.6**	**4.65**	**13.8**	**1.07**	**9.9**	**6.7**	**5.97**	**2.8**	**14.4**	**14.3**	**8.49**	**3.85**	**6.2**	1.11 U	**8.25**	**5.64**
Pesticides																													
(mg/kg)	alpha-BHC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Heptachlor epoxide	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																													
(mg/kg)	Arsenic	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
NA - Sample not analyzed for the listed analyte.
ND - Not detected; quantitation limit not available in historical data.
NS - No MassDEP standards exist for this analyte.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
PAHs - Polyaromatic Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
UCL - Upper concentration limit.
(1) - MCP UCL for C9-C10 aromatics used.

Table 3. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	G13-0.5-1.2	G14-0.5-1.5	G18-0.5-1.2	H1-0.5-0.65	H13-0.5-0.9	H14-0.5-1.25	H15-0.5-1.3	I1-0.5-0.7	I13-0.5-0.75	I14-0.5-1.25	J1-0.5-0.7	K1-0.5-0.7	K10-0.5-1.1	K12-0.5-1.2	K13-0.5-1.7	K14-0.5-1.15	K8-0.5-0.55	K9-0.5-0.9	L1-0.5-0.75	L10-0.5-1.1	L1-1-4'	L12-0.5-1	L13-0.5-1.5	L14-0.5-1.75	L6-1-4'	L6-8-9.5'
		Sample Depth (ft.):	0.5-1.2	0.5-1.5	0.5-1.2	0.5-0.65	0.5-0.9	0.5-1.25	0.5-1.3	0.5-0.7	0.5-0.75	0.5-1.25	0.5-0.7	0.5-0.7	0.5-1.1	0.5-1.2	0.5-1.7	0.5-1.15	0.5-0.65	0.5-0.9	0.5-0.75	0.5-1.1	1-4	0.5-1	0.5-1.5	0.5-1.75	1-4	8-9.5
		Sample Date:	12/28/2004	10/14/2004	10/14/2004	12/28/2004	12/28/2004	10/14/2004	10/14/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	8/17/2004	12/28/2004	12/28/2004	12/28/2004	11/17/2004	11/17/2004
		UCL																										
VOCs																												
(mg/kg)	Acetone	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Butanone (MEK)	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	cis-1,2-Dichloroethylene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Trichloroethylene	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	m+p Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	o-Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PAHs																												
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																												
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																												
(mg/kg)	Total PCBs	100	1.08 U	**5.83**	1.11 U	**7.58**	**3.83**	**6.38**	**5.87**	1.13 U	1.08 U	**4.2**	**4.39**	**11.9**	**3.53**	**6.01**	1.03 U	**13.8**	1.09 U	1.07 U	**1.09**	**7.17**	**3.64**	1.12 U	**5.02**	**4.21**	**35.8**	**10.5**
Pesticides																												
(mg/kg)	alpha-BHC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Heptachlor epoxide	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																												
(mg/kg)	Arsenic	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
NA - Sample not analyzed for the listed analyte.
ND - Not detected; quantitation limit not available in historical data.
NS - No MassDEP standards exist for this analyte.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
PAHs - Polyaromatic Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
UCL - Upper concentration limit.
(1) - MCP UCL for C9-C10 aromatics used.

Table 3. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	L7-1-4'	L7-4-8'	L7-8-9'	L8-1-3'	L8-3-6'	L8-6-9'	L9-0.5-0.75	L9-1-4'	L9-4-7'	L9-7-10'	M12-0.5-0.8	M14-0.5-1.25	N1-0.5-1.2	N12-0.5-0.9	N13-0.5-1.5	N14-0.5-1	N15-0.5-1	N2-0.5-1.4	N3-0.5-1.3	N4-0.5-0.75	O13-0.5-1.1	O14-0.5-1	O15-0.5-1.75	P11-0.5-0.9	P13-0.5-1.0
		Sample Depth (ft.):	1-4	4-8	8-9	1-3	3-6	6-9	0.5-0.75	1-4	4-7	7-10	0.5-0.8	0.5-1.25	0.5-1.2	0.5-0.9	0.5-1.5	0.5-1	0.5-1	0.5-1.4	0.5-1.3	0.5-0.75	0.5-1.1	0.5-1	0.5-1.75	0.5-0.9	0.5-1.0
		Sample Date:	11/17/2004	11/17/2004	11/17/2004	8/17/2004	8/17/2004	8/17/2004	12/28/2004	8/17/2004	8/17/2004	8/17/2004	12/28/2004	12/28/04	12/28/04	12/28/04	12/28/04	12/28/2004	12/28/2004	12/28/04	12/28/04	12/28/2004	12/28/04	12/28/04	12/28/04	12/28/04	12/28/04
		UCL																									
VOCs																											
(mg/kg)	Acetone	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Butanone (MEK)	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	cis-1,2-Dichloroethylene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Trichloroethylene	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	m+p Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	o-Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PAHs																											
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																											
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																											
(mg/kg)	Total PCBs	100	**7.01**	2.31 U	**2.36**	**3.81**	**13.5**	**0.961**	1.12 U	**1.67**	**1.24**	**3.32**	1.11 U	**8.35**	**5.02**	1.12 U	**3.26**	**11.2**	1.17 U	**4.94**	**4.91**	**3.25**	**11.1**	2.29 U	**14.8**	**11.8**	**17.9**
Pesticides																											
(mg/kg)	alpha-BHC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Heptachlor epoxide	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																											
(mg/kg)	Arsenic	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
NA - Sample not analyzed for the listed analyte.
ND - Not detected; quantitation limit not available in historical data.
NS - No MassDEP standards exist for this analyte.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
PAHs - Polyaromatic Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
UCL - Upper concentration limit.
(1) - MCP UCL for C9-C10 aromatics used.

Table 3. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	P14-0.5-1.35	P15-0.5-0.75	B1-S2	B5-S2	B5-S-3	TB/OW-2	TB/OW-2	TB/OW-2	TB/OW-18	TB/OW-18	TB/OW-18
		Sample Depth (ft.):	0.5-1.35	0.5-0.75	2-4	2-4	4-6	5-9	6-7.5	9.25-9.75	3.5-7	8-9	10.5-11.5
		Sample Date:	12/28/04	12/28/04	4/12/00	4/12/00	4/12/00	9/30/02	9/30/02	9/30/02	9/30/02	9/30/2002	9/30/02
		UCL											
VOCs													
(mg/kg)	Acetone	10,000	NA	NA	NA	NA	NA	**0.018**	**0.13**	ND	**0.014**	**0.13**	**0.25**
	Benzene	10,000	NA	NA	NA	NA	NA	**0.0011**	**0.0018**	ND	**0.0012**	**0.0036**	**0.0023**
	2-Butanone (MEK)	10,000	NA	NA	NA	NA	NA	**0.011**	**0.028**	ND	**0.012**	**0.044**	**0.088**
	cis-1,2-Dichloroethylene	5,000	NA	NA	NA	NA	NA	**0.0011**	**0.0019**	ND	**0.0012**	**0.0045**	**0.0021**
	Ethylbenzene	10,000	NA	NA	NA	NA	NA	**0.0011**	**0.0014**	ND	**0.0012**	**0.0037**	**0.0024**
	p-Isopropyltoluene (p-Cymene)	5,000[1]	NA	NA	NA	NA	NA	**0.0011**	**0.0014**	ND	**0.0012**	**0.0016**	ND
	Naphthalene	10,000	NA	NA	NA	NA	NA	**0.0054**	**0.0072**	ND	**0.0058**	**0.024**	ND
	n-Propylbenzene	5,000[1]	NA	NA	NA	NA	NA	**0.0011**	**0.0014**	ND	**0.0012**	**0.0016**	ND
	Tetrachloroethylene	10,000	NA	NA	NA	NA	NA	**0.0012**	**0.0014**	ND	**0.0012**	**0.0016**	ND
	Toluene	10,000	NA	NA	NA	NA	NA	**0.0037**	**0.0052**	ND	**0.0018**	**0.0064**	**0.0081**
	Trichloroethylene	600	NA	NA	NA	NA	NA	**0.0011**	**0.0014**	ND	**0.0012**	**0.0028**	**0.0021**
	1,2,4-Trimethylbenzene	5,000[1]	NA	NA	NA	NA	NA	**0.0054**	**0.0072**	ND	**0.0058**	**0.01**	ND
	m+p Xylene	10,000	NA	NA	NA	NA	NA	**0.0022**	**0.0041**	ND	**0.0023**	**0.011**	**0.0061**
	o-Xylene	10,000	NA	NA	NA	NA	NA	**0.0022**	**0.0029**	ND	**0.0023**	**0.0082**	**0.0041**
PAHs													
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	**0.088**	**0.33**	ND	ND	0.28 U	ND
	Anthracene	10,000	NA	NA	NA	NA	NA	**0.34**	**1.3**	ND	ND	**1.3**	**0.22**
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	**0.8**	**2.6**	ND	ND	**3.9**	**0.6**
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	**0.72**	**2.3**	ND	ND	**3.9**	**0.62**
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	**0.65**	**2**	ND	ND	**3.3**	**0.37**
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	**0.47**	**1.5**	ND	ND	**2.6**	**0.38**
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	**0.56**	**1.8**	ND	ND	**3.6**	**0.39**
	Chrysene	10,000	NA	NA	NA	NA	NA	**0.8**	**2.6**	ND	ND	**4.1**	**0.72**
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	**0.12**	**0.4**	ND	ND	**0.5**	ND
	Fluoranthene	10,000	NA	NA	NA	NA	NA	**1.7**	**5.4**	ND	ND	**6.4**	**0.58**
	Fluorene	10,000	NA	NA	NA	NA	NA	**0.14**	**0.66**	ND	ND	**0.78**	ND
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	**0.54**	**1.7**	ND	ND	**3.1**	**0.35**
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	ND	0.34 U	ND	ND	0.28 U	ND
	Naphthalene	10,000	NA	NA	NA	NA	NA	**0.041**	**0.22**	ND	ND	**0.61**	ND
	Phenanthrene	10,000	NA	NA	NA	NA	NA	**1.3**	**4.5**	ND	ND	**5.1**	**0.75**
	Pyrene	10,000	NA	NA	NA	NA	NA	**1.6**	**5**	ND	ND	**5.8**	**0.94**
SVOCs													
(mg/kg)	Acenaphthene	10,000	NA	NA	0.32 U	1.44 U	NA	ND	ND	ND	ND	ND	ND
	Acenaphthylene	10,000	NA	NA	**0.46**	0.74 U	NA	ND	ND	ND	ND	ND	ND
	Anthracene	10,000	NA	NA	**1.2**	**2.1**	NA	ND	**1.2**	ND	ND	3.5 U	ND
	Benzo(a)anthracene	3,000	NA	NA	**3.0**	**5.4**	NA	**0.88**	**2.3**	ND	ND	**4.6**	ND
	Benzo(a)pyrene	300	NA	NA	**2.8**	10.8 U	NA	**0.8**	**2.2**	ND	ND	**4.6**	ND
	Benzo(b)fluoranthene	3,000	NA	NA	**3.2**	11.8 U	NA	**0.65**	**1.6**	ND	ND	**3.6**	ND
	Benzo(g,h,i)perylene	10,000	NA	NA	**1.7**	3.0 U	NA	**0.57**	**1.4**	ND	ND	3.5 U	ND
	Benzo(k)fluoranthene	10,000	NA	NA	**0.75**	3.4 U	NA	**0.67**	**1.8**	ND	ND	**4**	ND
	Chrysene	10,000	NA	NA	**2.4**	10.4 U	NA	**0.87**	**2.4**	ND	ND	**4.9**	ND
	Dibenz(a,h)anthracene	300	NA	NA	**0.46**	1.18 U	NA	ND	ND	ND	ND	ND	ND
	Fluoranthene	10,000	NA	NA	**6.4**	17.4 U	NA	**0.96**	**4.6**	ND	ND	**7.1**	ND
	Fluorene	10,000	NA	NA	**0.39**	1.52 U	NA	ND	ND	ND	ND	ND	ND
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	**1.5**	4.0 U	NA	ND	**1.4**	ND	ND	3.5 U	ND
	2-Methylnaphthalene	5,000	NA	NA	0.32 U	0.31 U	NA	ND	ND	ND	ND	ND	ND
	Naphthalene	10,000	NA	NA	0.32 U	**0.46**	NA	ND	0.74 U	ND	ND	3.5 U	ND
	Phenanthrene	10,000	NA	NA	**4.2**	17.6 U	NA	**1.4**	**4.1**	ND	ND	**5.7**	ND
	Pyrene	10,000	NA	NA	**4.4**	17.2 U	NA	**1.7**	**4.3**	ND	ND	**6.8**	ND
	Carbazole	NS	NA	NA	**0.47**	2.0 U	NA	ND	ND	ND	ND	ND	ND
PCBs													
(mg/kg)	Total PCBs	100	**8.82**	1.16 U	NA	NA	**18**	**0.775**	**3.69**	**0.02715**	ND	**6.12**	**0.334**
Pesticides													
(mg/kg)	alpha-BHC	NS	NA	NA	**0.33**	**0.042**	NA	NA	NA	NA	NA	NA	NA
	Heptachlor epoxide	10	NA	NA	**0.042**	**0.185**	NA	NA	NA	NA	NA	NA	NA
Metals, total													
(mg/kg)	Arsenic	500	NA	NA	7.6 U	40 U	NA	**2.2**	**7.7**	ND	**1.1**	**15**	**2.3**
	Barium	10,000	NA	NA	**710**	**18,000**	NA	**130**	**210**	**20**	**19**	**640**	**66**
	Cadmium	1,000	NA	NA	**1.5**	**5.2**	NA	**0.57**	**1.2**	ND	ND	**4.4**	ND
	Chromium	2,000	NA	NA	**61**	**760**	NA	**32**	**25**	**6.7**	**16**	**150**	**14**
	Lead	6,000	NA	NA	**480**	**1,500**	NA	**120**	**440**	**2.2**	**12**	**1,000**	**51**
	Mercury	300	NA	NA	**0.69**	**3.2**	NA	**0.32**	**0.74**	**0.084**	ND	**1.7**	**0.17**
	Silver	2,000	NA	NA	2.1 U	11 U	NA	ND	0.58 U	ND	ND	**1.1**	ND

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
NA - Sample not analyzed for the listed analyte.
ND - Not detected; quantitation limit not available in historical data.
NS - No MassDEP standards exist for this analyte.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
PAHs - Polyaromatic Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
UCL - Upper concentration limit.
(1) - MCP UCL for C9-C10 aromatics used.

Table 4. Summary Statistics for Barium
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-2	S-1/GW-3	UCL*	Background	# of Samples	# of Detects	Freq. of Detects	Min. of Detects (mg/kg)	Max. of Detects (mg/kg)	Location of Max. Detected	Min. of Non-Detects (mg/kg)	Max. of Non-Detects (mg/kg)	Mean Concentration (mg/kg)	EPC (mg/kg)	EPC Rationale
Metals, total																
	Barium	1,000	1,000	10,000	50	8	8	100.0%	19	18000	B5-S2	--	--	2.5E+03	2.5E+03	Mean

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
Boxed maxima exceed natural soil background.
EPC - Exposure Point Concentration.
UCL* - Upper concentration limit.
UCL - Upper confidence limit.
* - Background Concentration for natural soil.

APPENDIX D

PUBLIC INVOLVEMENT NOTIFICATIONS

Wannalancit Mills
650 Suffolk Street
Lowell, MA 01854

978.970.5600 PHONE
978.453.1995 FAX

www.TRCsolutions.com

February 12, 2016

TRC Reference No.: 115058.0000.0000

Dr. Brenda Weis
Health Department
1213 Purchase Street, First Floor
New Bedford, Massachusetts 02740

RE: Modified Phase III Remedial Action Plan
Nemasket Street Lots
New Bedford, Massachusetts
MassDEP RTN 4-15685

Dear Dr. Weis:

On behalf of the City of New Bedford (the "City"), and pursuant to 310 CMR 40.1403 of the Massachusetts Contingency Plan (MCP), TRC Environmental Corporation (TRC) has prepared this letter to inform you of the submittal of a Modified Phase III Remedial Action Plan for the Nemasket Street Lots, Parker Street Waste Site, New Bedford, Massachusetts.

If you have any questions concerning this document, please do not hesitate to contact David Sullivan at TRC at (978) 656-3565 or Ray Holberger with the Department of Environmental Stewardship at (508) 961-4576.

Sincerely,
TRC Environmental Corporation

David M. Sullivan, LSP
Sr. Project Manager

Cc: Ray Holberger, New Bedford Department of Environmental Stewardship

Wannalancit Mills
650 Suffolk Street
Lowell, MA 01854

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www.TRCsolutions.com

February 12, 2016

TRC Reference No.: 115058.0000.0000

Mayor Jonathan F. Mitchell
Office of the Mayor
City Hall, Room 311
New Bedford, Massachusetts 02740

RE: Modified Phase III Remedial Action Plan
Nemasket Street Lots
New Bedford, Massachusetts
MassDEP RTN 4-15685

Dear Mr. Mitchell:

On behalf of the City of New Bedford (the "City"), and pursuant to 310 CMR 40.1403 of the Massachusetts Contingency Plan (MCP), TRC Environmental Corporation (TRC) has prepared this letter to inform you of the submittal of a Modified Phase III Remedial Action Plan for the Nemasket Street Lots, Parker Street Waste Site, New Bedford, Massachusetts.

If you have any questions concerning this document, please do not hesitate to contact David Sullivan at TRC at (978) 656-3565 or Ray Holberger with the Department of Environmental Stewardship at (508) 961-4576.

Sincerely,
TRC Environmental Corporation

David M. Sullivan, LSP
Sr. Project Manager

Cc: Ray Holberger, New Bedford Department of Environmental Stewardship

APPENDIX E

PUBLIC COMMENTS AND RESPONSES ON 2014 DRAFT PHASE III REPORT

Response to Public Comments on Nemasket Lots November 2014 Draft Phase III Remedial Action Plan

CLEAN

Comment 1 - A Phase III is inappropriate for the Nemasket Street Lots.

Response: Under the Massachusetts Contingency Plan (MCP; 310 CMR 40.0000), a Phase III - Identification, Evaluation and Selection of Comprehensive Remedial Alternatives (Phase III) shall be conducted for any disposal site for which a Phase II Comprehensive Site Assessment has been completed and a Permanent Solution in accordance with 310 CMR 40.1000 has not yet been achieved. This is precisely the path the City is pursuing for the Nemasket Street lots. The next step is a Phase IV - Implementation of the Selected Comprehensive Remedial Alternative (Phase IV). A Phase IV is appropriate because of the scale and scope of the anticipated remedial actions, and is consistent with the Massachusetts Department of Environmental Protection's (MassDEP's) expectations for response actions at these properties.

As a matter of Bureau of Waste Site Cleanup (BWSC) policy, and consistent with prior MassDEP regulatory concurrence on the Parker Street Waste Site (PSWS), significant remedial actions have already been accomplished by the City for the PSWS and nearby environs through "partial" submittals. This is analogous to the Area of Concern (AOC) or Operable Unit (OU) approach employed by environmental regulatory agencies such as the United States Environmental Protection Agency (EPA).

Under this approach, a site can be divided into a number of distinct areas depending on the complexity of the problems associated with the site. These areas, called OUs, may address geographic regions of a site, different site problems, or areas where a specific action is required. This approach recognizes that a number of separate activities are undertaken as part of a site investigation and cleanup, and these activities can be broken down into manageable components. Examples include the Keith Middle School (KMS), Walsh Field, New McCoy Field, private properties, Liberty Street Slim parcel, and the anticipated Permanent Solution with Conditions for New Bedford High School (NBHS).

The Permanent Solution Statement that will eventually be filed for the Nemasket Street Lots will also be a Permanent Solution-Partial Statement. The City is fully cognizant that a final Permanent (or Temporary) Solution Statement for the PSWS will need to reference all Permanent or Temporary Solution-Partial Statements previously submitted under the Release Tracking Number (RTN) and, if applicable, cover any remaining conditions not addressed by the Permanent or Temporary Solution-Partial Statements. Given the regulatory, logistical, geographic, and technical complexities of the work undertaken by the City, the "partial" assessment and solution implementation approach has been logical, productive, and manageable, and will continue as the administrative model for the foreseeable future.

Comment 2 - This is not a separate site. The Nemasket Street Lots are a portion of the larger Parker Street Waste Site (PSWS) and as such should not be managed in a piecemeal fashion. Simply because a Phase II was submitted for this area previously, this does not mean that this error should be continued. CLEAN commented on this prior to the filing of the Phase II for the Nemasket Street Lots.

Response: The City rejects the description of response actions undertaken by the City (and EPA/MassDEP) as "piecemeal" and in "error", and stands by the methodical approach. As noted above in

the City's response to Comment 1, the assessment and heretofore successful remediation (i.e., Permanent Solutions or Class A or B Response Action Outcomes) by the City at a half dozen locations has been thoughtful, methodical, and productive despite considerable regulatory, technical and logistical challenges. The City's approach has been conducted in a technically competent manner with both MassDEP and EPA concurrence, and the City anticipates continuing along this pathway in the future.

Comment 3 - The selection of any remedy must consider the boundaries of the site. The draft Phase III ignores that there are three private properties (2 properties to the west and one property to the south across Ruggles Street) that abut the Nemasket Street Lots that were investigated by EPA/MassDEP and found to have elevated concentrations of PCBs and other PSWS contaminants. Contaminant concentrations on these properties were high enough for EPA to take Removal Actions. Based upon the detected concentrations on these residential properties, they should be considered in MCP Response Actions for the Nemasket Street Lots.

Response: As noted above, the City is conducting response actions in a thoughtful, methodical, and successful manner. The City has no knowledge to suggest that these private properties warrant accelerated action per the MCP or other applicable environmental regulations. Also, matters pertaining to private properties require a higher level of sensitivity and discretion, which takes a significantly greater degree of coordination, and ultimately, requires more time. As the commenter is no doubt aware, the City has been actively reviewing matters related to properties where EPA recently exercised its involvement. As that process occurs, the City continues to pursue response actions at properties owned by the City.

Comment 4 - The Phase III must be revised to consider the energy costs of the remedial alternatives as required by the MCP (40.0858(4)(c)).

Response: The City respectively notes that the Phase III does consider the energy costs of the remedial alternatives per the MCP in accordance with the regulations. The core elements articulated in MassDEP WSC #14-150, the RAPS elements of 310 CMR 40.0191(3)(e), and the 310 CMR 40.0848(4)(c) amendment language as follows:

Phase III Conceptual Remedial Alternative	**Location in Phase III Document**
Alternative No. 2 - Maintenance of Existing Site Controls	Page 3-8, seventh paragraph
Alternative No. 3 – Installation of Clean Utility Corridors, Construction of Exposure Barriers (Containment/Capping), and Institutional Controls	Page 3-13, fourth paragraph
Alternative No. 4 – Targeted Excavation/Disposal of Soil with PCB Concentrations Greater than 100 mg/kg, Construction of Exposure Barriers (Containment/Capping), and Institutional Controls	Page 3-18, last paragraph
Alternative No. 5 – Targeted Excavation/Disposal of Soil with PCBs greater than 10 mg/kg, Construction of Exposure Barriers (Containment/Capping), and Institutional Controls	Page 3-23, last paragraph Page 3-24, first paragraph

Please consider the following:

- **As a component of the detailed evaluation of alternatives -** Under the MCP, 310 CMR 40.0848(4)(c) requires that the relative total consumption of energy resources in the

implementation and operation of the alternatives, and externalities associated with the use of those resources, including greenhouse gases and other air pollutants be addressed in the detailed evaluation presented in the Phase III. These provisions to address "core elements" in support of Commonwealth's energy and emission reduction mandates of 2008, and were included in the April 2014 Regulatory Amendment to the MCP.

- **In response to the Response Action Performance Standards (RAPS) -** In a related part of the MCP (310 CMR 40.0191(3)(e)) not cited by the commenter, the application of the Response Action Performance Standard (RAPS) shall be protective of health, safety, public welfare and the environment and shall include, without limitation, in the context of meeting the requirements of the MCP, consider eliminating or reducing, to the extent practicable and consistent with response action requirements and objectives, total energy use, air pollutant emissions, greenhouse gases, water use, materials consumption, and ecosystem and water resources impacts resulting from the performance of response actions through energy efficiency, renewable energy use, materials management, waste reduction, land management, and ecosystem protection. As with 310 CMR 40.0848(4)(c) discussed above, these provisions to address "core elements" in support of Commonwealth's energy and emission reduction mandates of 2008, and were included in the April 2014 Regulatory Amendment to the MCP.

- **In response to MassDEP Greener Cleanups Guidance (WSC #14-150) -** In related MassDEP guidance not cited by the commenter, the focus of such approaches includes addressing five core elements or factors for reducing the environmental footprint of a cleanup: 1) Minimizing total energy use while maximizing the use of renewable energy; 2) Minimizing emissions of greenhouse gases and other air pollutants; 3) Minimizing water use and impacts to water resources; 4) Reducing, reusing and recycling materials and waste; and 5) Avoiding or reducing adverse impacts to ecosystems and land resources.

Comment 5 - The O&M costs for alternatives 3, 4, and 5 do not consider the costs for the required replacement of the turf field approximately every 10 years at a likely cost of >$400,000.

Response: All three alternatives (3, 4, and 5) include the same turf system, hence the comparison remains relative.

Comment 6 - Will the replacement of the turf field require approval from EPA as it may be considered a disturbance of the "cap"?

Response: Permitted and unpermitted activities and continuing obligations will be set forth in the Activity and Use Limitation (AUL) implemented for the property as part of the remedy. Relying on the example of the KMS remedy, which also fell within EPA's jurisdiction, and subject to EPA review and concurrence, the City anticipates that the AUL will outline future management requirements including soil management, soil management planning, health and safety planning, maintenance/disturbance of exposure barrier components, inspections and associated documentation, etc.

Comment 7 - Has the City of New Bedford considered the health concerns regarding exposure to children of the components of turf fields that have been reported in the news? Should these health concerns represent an incremental cancer risk that should be included in the selection of this type of cap?

Response: There have been numerous studies conducted by Environmental and Public Health Agencies evaluating the potential human health risks from exposure to crumb rubber infill used in synthetic turf fields (e.g., Connecticut Department of Environmental Protection, Connecticut Department of Public Health, University of Connecticut Health Center, California Office of Environmental Health Hazard Assessment (OEHHA), New York State Department of Environmental Conservation, New York State Department of Health, New York City Department of Health and Mental Hygiene, Consumer Product Safety Commission, USEPA)

These studies have measured concentrations of particulate matter (PM 2.5) and chemicals of concern (metals, PAHs, SVOCs, VOCs) found in crumb rubber infill in the breathing space above the fields. Results of the sampling were incorporated into conservative (i.e. health protective) human health risk assessment models to calculate potential cancer and non-cancer risks to the users of the fields. Each of the studies concluded that there was no elevated health risk and that air concentrations measured at the fields were no different than what was measured in "background" areas away from the fields. A number of these studies also evaluated the risk from the potential ingestion of the crumb rubber particulates and found that there was no association with elevated health risk.

Comment 8 - Given the large cost of the "turf field" cap, should alternative caps be considered such as soil and paving? Furthermore, if a less expensive cap alternative was selected and a $4.2M cost was retained, additional contamination could be removed from the Nemasket Street Lots and the abutting properties.

Response: Both soil and pavement based exposure barriers carry considerable capital and Net Present Value (NPV) cost elements that, in the end, allow an exposure barrier utilizing a synthetic turf covering to be reasonably financially competitive.

Recall that creating a new paved surface introduces significant environmental impacts in terms of storm water management and environmental permitting/mitigation, and associated engineering and infrastructure (which the City's recommended approach will incrementally reduce through the removal of a portion of the southern KMS paved parking lot).

Also note that the City desires the higher level of service and usability offered by a synthetic turf field, a level of performance that even the most highly maintained natural grass surface cannot match. In addition, a living grass field, created and maintained for use as an athletic facility and utilized to its highest potential level of service, has significant associated maintenance costs (water, soil conditioning/fertilization, over seeding, coring, dethatching, top dressing, event preparation, repair, etc.) and a significant maintenance-related labor cost element as compared to a synthetic turf field. This is not the City's first investment in turf fields and the incremental costs of the specialized equipment needed to maintain the turf field have already been expended and the equipment can be used at this new facility.

Also, a synthetic turf field eliminates the need for the addition of fertilizers, pesticides, and herbicides. Natural grass sports fields can require up to 1.5 million gallons of water per acre per year. The frequent mowing required for natural grass lawns and fields also results in emissions of hydrocarbons and carbon monoxide (up to 5% of such emissions in the United States, according to the Environmental Protection Agency).

In short, while a synthetic turf field may be more expensive than natural grass, the costs are comparable and a natural grass surface cannot approach the performance envelope offered by a turf field that is desired by the City as an investment in this neighborhood and school zone.

Comment 9 - Do the costs for alternatives 3, 4, and 5 include areas beyond the Nemasket Street Lots? If the inclusion of these additional costs is appropriate, should alternatives focused only on the areas "where contamination has come to be located" (including the abutting residential properties) be considered? Would this result in additional contamination being removed from the Nemasket Street Lots and the impacted abutting residential properties for the same cost? Could these costs achieve a permanent solution without restrictions?

Response: Please see the City's response to Comments 2 and 3.

Comment 10 - CLEAN continues to recommend that public participation and discussion of alternatives prior to the preparation of reports is the best course of action for community support and cost effectiveness.

Response: The City remains unreservedly committed to the public participation process set forth in the June 2012 Public Involvement Plan, which was offered to the public for review and comment prior to its finalization and implementation.

Mass Department OF HEALTH

Comment 11 - Most of the remedial action alternatives discussed involve some excavation, which has the potential to generate fugitive dusts. As the parcels in question are adjacent to sensitive receptors (e.g., nearby residents and/or children going to and from the Keith Middle School), MDPH/BEH recommends developing a detailed dust control plan prior to commencing remedial work. To limit potential exposures to fugitive dusts, the plan should detail dust suppression methods to be used and specify dust concentrations that will trigger increased dust suppression efforts and, if necessary, work stoppage.

Response: The Department of Environmental Stewardship, and the City's consultant TRC Environmental Corporation, have historically taken an aggressive approach to fugitive dust monitoring and mitigation. No monitoring data to date for work performed during TRC's period of performance have indicated an excursion approaching, or beyond, an acceptable level. In addition, during TRC's period of performance, we have received no complaints regarding fugitive dust emissions associated with any of the investigative and remedial work at the Parker Street Waste Site for worked performed by or for the City.

The following excerpt from the August Release Abatement Measure Plan Modification for Soil Excavation and Removal at the Acquired Residential Properties outlines the typical approach used for dust monitoring and mitigation.

> *"6.4.1 Instrumented Air Monitoring for Dust*
>
> *Air monitoring will be performed using a combination of real-time dust monitoring upwind and downwind of the work area, and at a point near the closest receptor.*

When impacted soils are encountered during RAM-related soil excavation and management activities, real-time field screening of breathing zone dust levels will be conducted using direct reading instruments that are designed to monitor air quality on a real-time basis. A second instrument will be used to monitor dust levels downwind of the excavation. A third dust monitor will be placed towards the nearest receptor, regardless of wind direction.

The dust monitoring units will be TSI Dustrak™ units, or equivalent, equipment with size-selective inlet for particles of 10 micrometers in diameter or less (PM10). Background samples will be collected for at least 15 minutes at each location prior to the start of excavation activities. The continuous dust monitor uses a light scattering photometer to quantify particles and converts the counts to a concentration in units of milligrams per cubic meter (mg/m3). This instrumentation has an accuracy of 0.001 mg/m3. The dust monitoring instruments will be placed in weatherproof cases with an omni-directional probe to minimize wind interference. The dust monitoring instruments will be zeroed daily before use and at the end of the day. Data will be logged at 60-second intervals and will be monitored periodically by field personnel during RAM-related excavation activities. Data will be downloaded daily.

If sustained ambient dust levels exceed the EPA National Ambient Air Quality Standard of 150 µg/m3 at downwind sampling locations (a sustained reading would consist of a reading lasting 15 minutes or longer), dust suppression activities will be increased with a greater usage of water sprays. Monitoring levels are subject to change and may be made more stringent as additional soil data are obtained and evaluated.

As noted above in Section 4.2.3, during activities that involve the movement or other disturbance of potentially impacted soils, dust suppression consisting of water sprays will be routinely implemented, and potential fugitive dust emissions will be monitored simultaneously. Increased water sprays (e.g., additional hoses and/or water volume) will be utilized as needed based on visual observations of effectiveness and instrument monitoring. Where wind conditions are present that render dust suppression ineffective based on instrument readings and/or visual observations (based on the professional judgment of environmental oversight personnel), those activities will be suspended until favorable wind conditions resume/return or dust suppression techniques suitable for the conditions can be reliably implemented."

The above-described approach for dust monitoring and mitigation will also be utilized during implementation of the remedy at the Nemasket Street Lots.

APPENDIX F

RISK EVALUATION FOR ALTERNATIVE NO. 3

TRC
Wannalancit Mills
650 Suffolk Street
Lowell, Massachusetts 01854

Main 978.970.5600
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Memorandum

To:	Dave Sullivan, LSP, TRC Environmental Corporation
From:	Diane Silverman, Ph.D., TRC Environmental Corporation
CC:	Matthew A. Oliveira, CHMM, TRC Environmental Corporation
Subject:	Summary of Method 3 Utility Worker Risk Calculations for the Nemasket Street Lots and Nemasket Street Utility Easement, New Bedford, Massachusetts
Date:	October 23, 2014

This memorandum summarizes Method 3 risk calculations for the utility worker scenario, prepared to evaluate anticipated post-remedial conditions at the Nemasket Street Lots and Nemasket Street utility easement in New Bedford, Massachusetts (the Site). The Method 3 risk calculations were prepared consistent with 310 CMR 40.0835(4) (g) and (h) of the Massachusetts Contingency Plan (MCP) and the Massachusetts Department of Environmental Protection (MassDEP) *Guidance for Disposal Site Risk Characterization* (MassDEP, 1995).

The risk calculations were performed to determine whether, following the completion of risk reduction activities involving capping of on-property soils and construction of an athletic complex, as described in detail in the Phase III report, emergency utility worker exposures within the existing Nemasket Street utility easement would be associated with No Significant Risk. No other receptors have been included in this evaluation because the Nemasket Street Lots (including the utility easement) will be entirely covered with the athletic field surface or other exposure barriers, newly-installed utilities will be in clean utility corridors and an Activity and Use Limitation will be implemented to manage soils located below the athletic field or other exposure barriers, thereby preventing soil exposure to all receptors except for the utility worker in the existing Nemasket Street easement. The existing Nemasket Street utility easement contains a storm drain line and sewer line located 6-8 feet below ground surface.

For completeness, utility worker exposure to shallow groundwater within the clean utility corridors throughout the Nemasket Street Lots is also evaluated since soil, but not shallow groundwater contact will be prevented by the remedy.

The Nemasket Street utility easement, located partially on the Nemasket Street Lots and partially on the adjacent Keith Middle School (KMS) property, has been evaluated as one exposure point for utility worker exposures. Utility workers within the easement are assumed to be exposed to soil within the easement via incidental ingestion, dermal contact and fugitive dust inhalation, to shallow groundwater via dermal contact and to trench air via inhalation of volatile compounds released from soil and groundwater. The utility worker within the clean utility corridors across the Nemasket Street

Lots are evaluated as a second exposure point and are assumed to be exposed to shallow groundwater via dermal contact and to trench air via inhalation of volatile compounds released from groundwater.

Data Used

Analytical soil data collected by BETA and TRC between September 2004 and July 2011 from the Nemasket Street utility easement were considered for use in the Method 3 risk calculations. Sample locations with non-detect or below natural soil background levels of chemicals were excluded from the data set, consistent with the approach used for the Phase II risk characterization. Tables 1 and 2 present summaries of the analytical data for the 0 to 6 foot soil interval and 0 to 15 foot soil interval, respectively, for the Nemasket Street utility easement, applicable to potential utility worker exposures given the depths of existing utilities in the easement. Attachment 1, Tables 1 and 2, present the data sets for the 0 to 6 foot and 0 to 15 foot soil intervals.

Groundwater data collected from monitoring wells MW-37 and MW-39 (2011) and KMS monitoring well MW-3 (2013/2014) were used to evaluate utility worker exposures within the Nemasket Street utility easement, due to the proximity of the monitoring wells to the easement. Shallow groundwater data for the utility easement are presented in Table 3. As presented in Table 4, groundwater data collected in 2011 from monitoring wells MW-37, MW-38 and MW-39 from the Nemasket Street Lots were used to evaluate utility worker exposures to shallow groundwater and trench air within the clean utility corridors.

Compounds Evaluated

As described by MassDEP, compounds with maximum detected concentrations below MassDEP-published natural soil background concentrations are not evaluated in the risk characterization because their concentrations are consistent with those seen in unimpacted areas. Therefore, the compounds evaluated for these Method 3 risk calculations are those with individual detected concentrations in excess of MassDEP established background concentrations or detected compounds for which background concentrations have not been established. All compounds detected in shallow groundwater were considered groundwater chemicals of potential concern (COPCs). In addition, all volatile compounds detected in soil and shallow groundwater were considered COPCs for the trench air inhalation pathway.

Hot Spots

Soil data from the Nemasket Street utility easement were evaluated for the presence of hot spots. Groundwater data were not evaluated for the presence of hot spots since maximum detected concentrations were used as exposure point concentrations (EPCs).

A hot spot is defined in the MCP as a discrete area where the chemical concentrations are substantially higher than those present in the surrounding area. A discrete area where the average concentration within the area is greater than ten but less than one hundred times the average concentration in the immediate surrounding area is a hot spot unless there is no evidence that the discrete area would be associated with greater exposure potential than the surrounding area. In all cases, a discrete area where the chemical concentration is greater than one hundred times the concentration in the surrounding area is to be considered a hot spot. The identification of hot spots is performed to minimize the likelihood that a location with significantly elevated chemical

concentrations will be diluted by combining it with locations of lesser chemical concentrations in the evaluation.

As further stated in the MCP, in no case should chemical concentrations equal to or less than an applicable MCP Method 1 soil standard be considered indicative of a hot spot. Therefore, 11 chemicals for the 0 to 6 foot interval (Table 1) and 11 chemicals for the 0 to 15 foot interval (Table 2) were included in the hot spot analysis as all other detected chemicals were present at levels less than applicable MCP Method 1 soil standards or maximum detected concentrations were used as EPCs.

The following table shows the maximum detected concentration of each of the compounds included in the hot spot analysis, the average exposure point concentration for each soil interval excluding the maximum detection(s), and the variance between the maximum concentration and the average concentration. Soils within the entire 0 to 6 foot or 0 to 15 foot depth intervals will be equally accessible to utility workers should excavations be necessary at either of the exposure points.

Chemical	Maximum Concentration (mg/kg)	Average Concentration Excluding Maximum (mg/kg)	Variance (Maximum versus Average Excluding Maximum)
0 to 6 Foot Soil Interval			
Naphthalene	36	1.25	29-fold
Benzo(a)anthracene	37	6.05	6-fold
Benzo(a)pyrene	25	5.48	5-fold
Benzo(b)fluoranthene	36	7.17	5-fold
Dibenz(a,h)anthracene	6.1	0.88	7-fold
Indeno(1,2,3-cd)pyrene	15	3.08	5-fold
Total PCBs	127.6	12.16	10-fold
Arsenic	83	13.44	6-fold
Barium	7,500	812	9-fold
Lead	4,900	913	5-fold
Zinc	2,500	574	4-fold
0 to 15 Foot Soil Interval			
Naphthalene	36	1.11	33-fold
Benzo(a)anthracene	37	5.22	7-fold
Benzo(a)pyrene	25	4.73	5-fold
Benzo(b)fluoranthene	36	6.18	6-fold
Dibenz(a,h)anthracene	6.1	0.79	8-fold
Indeno(1,2,3-cd)pyrene	15	2.67	6-fold
Total PCBs	127.6	11.17	11-fold
Arsenic	83	12.5	7-fold
Barium	7,500	743	10-fold
Lead	4,900	836	6-fold
Zinc	2,500	491	5-fold

As shown above, the maximum concentrations of the compounds selected for evaluation for both soil intervals vary from the average concentrations by less than 100-fold. Therefore, no hot spots as defined by the MCP were identified.

Exposure Point Concentrations

EPCs for soil were determined consistent with 310 CMR 40.0926 and supporting MassDEP guidance. An EPC is the measured or estimated amount of a constituent in the environmental medium of concern at the point of human contact. Based on MassDEP (1995) guidance, the EPCs for the environmental media typically correspond to the arithmetic mean of the reported results for each data set for areas of contiguous impacts over which people average their exposure. Therefore, arithmetic average concentrations have been primarily used as soil EPCs; however, in accordance with MCP requirements, in those instances where individual chemicals were present at concentrations greater than ten times applicable standards or where greater than 25-percent of the analytical results for an individual chemical exceeded an applicable standard, EPCs that represent the 95-percent upper confidence limit of the arithmetic mean were calculated using EPA's ProUCL software version 5.0.00 (EPA, 2013). The 95-percent upper confidence limit recommended by the ProUCL software was selected as the EPC in these cases. For small data sets or in cases with the arithmetic average concentration or the 95-percent upper confidence limit exceeded the maximum detected concentration, the maximum detected concentration was used as the EPC. EPCs are provided in Tables 1 and 2 for the 0 to 6 and 0 to 15 foot soil intervals, respectively. ProUCL outputs, documenting the calculation of 95%-percent upper confidence limits, are provided in Attachment 2.

For shallow groundwater, maximum detected concentrations, as presented in Tables 3 and 4, were used as EPCs for the Nemasket Street Utility Easement and Nemasket Street Lots, respectively.

Exposure Assumptions

Utility worker exposure to soil were quantitatively evaluated primarily using exposure assumptions provided in the MassDEP construction worker Shortform (MassDEP, 2014b). Exposure to utility workers could occur during excavations that expose impacted soil. Potential exposures to soil COPCs are assumed to occur 8 hours/day for 1 day/week. Utility workers are identified as adults (58 kg average body weight) involved in physical activities equivalent to an average inhalation rate of 20 cubic meters per day (m^3/day). Inhalation of fugitive dusts outdoors by construction workers was evaluated using a PM_{10} of 60 micrograms per cubic meter ($\mu g/m^3$) (MassDEP, 2008c). The incidental ingestion rate of soil was set at 100 mg/day. Dermal contact with soil COPCs was assumed via the face, hands, forearms, and feet (approximate surface area of 3,477 cm^2) using a soil adherence factor of 0.29 mg/cm^2. MassDEP's Construction Worker Shortform was used to evaluate soil exposures for this receptor, with the exposure frequency adjusted to 1 day/week. Excavations were assumed to proceed down to the water table. Contact with shallow groundwater was conservatively assumed to occur 8 hours/day for 65 days/year. Dermal contact with groundwater COPCs was also assumed to occur via the face, hands, forearms, and feet, consistent with soil exposures. Modeling of volatile compounds released from soil and groundwater into an excavation trench was performed using assumptions presented in Attachment 3. Inhalation of trench air was conservatively assumed to occur 8 hours/day for 130 days/year. The specific equations used to calculate exposures are provided on the Shortforms and risk calculation spreadsheets presented in Attachment 4.

Toxicity Values

Subchronic reference doses (RfDs) and reference concentrations (RfCs), used to evaluate non-carcinogenic health endpoints, slope factors (SFs) and unit risk (UR) values, used to evaluate carcinogenic effects, and relative absorption factors (RAFs) used in this risk characterization are the same as those values used by MassDEP in the development of the MCP numerical standards (MassDEP, 2014), except for 1,3,5-trimethylbenzene. For this compound, toxicity values and RAFs for C9-C10 aromatics, as specified by MassDEP, were used since this compound is included as part of this petroleum fraction, based on chemical structure and carbon chain length.
RfDs, RfCs, SFs, URs and RAFs are provided on the Shortforms and risk calculation spreadsheets presented in Attachment 4.

Risk Characterization

To characterize the risk of harm to utility workers from potential soil and/or shallow groundwater exposures, carcinogenic risks and non-carcinogenic hazards were estimated using the soil, groundwater and modeled trench air EPCs for each chemical selected for evaluation for the two exposure points. Risks and hazards associated with soil exposures were summed to the risks and hazards calculated shallow groundwater and trench air exposures to account for cumulative multi-media effects. The cumulative receptor risk values were compared to the MassDEP Risk Limits (Excess Lifetime Cancer Risk [ELCR] Limit of 1×10^{-5} and Non-Carcinogenic Hazard Index [HI] Risk Limit of 1) to assess whether a condition of "No Significant Risk" exists. If the cumulative HI exceeded the Risk Limit of 1, the cumulative HI was segregated by target organ, as described in MassDEP guidance (MassDEP, 1995). Each target organ HI was then compared to the Risk Limit of 1 to establish whether a condition of "No Significant Risk" exists at the Site.

The cumulative risks and hazards estimated for the utility worker at the Nemasket Street utility easement and Nemasket Street Lots are summarized in Table 5, assuming exposure to the 0 to 6 and 0 to 15 foot soil intervals, shallow groundwater and trench air for the Nemasket Street utility easement and shallow groundwater and trench air for the Nemasket Street Lots.

As shown on Table 5, a condition of No Significant Risk exists for the 1-day emergency utility worker at the Nemasket Street utility easement for both the 0 to 6 and 0 to 15 foot soil intervals. In addition, a condition of No Significant Risk exists for the 130-day utility worker working within the clean utility corridors within the Nemasket Street Lots.

These risk calculations will be updated and the conclusions confirmed once remedy implementation has occurred.

Risk to Public Welfare

In order to achieve a permanent solution, MCP Upper Concentration Limits (UCLs) need to be met, based on a comparison to soil and groundwater EPCs. As shown in Tables 1 through 4 for soil within the utility easement and shallow groundwater within the utility easement and across the Nemasket Street Lots, EPCs do not exceed MCP UCLs. Soil beneath the to-be-constructed cap on the Nemasket Street Lots has not been evaluated for direct contact utility worker exposures because clean corridors will be constructed during remedy implementation. However, because contaminated soil will remain outside the clean utility corridors, soil EPCs have been calculated for the 0 to 15 foot interval for the area within the Nemasket Street Lots property boundary and for the soil volume on the KMS property

that will become part of the athletic fields. The data set for the 0 to 15 foot soil interval for the Nemasket Street Lots is presented in Attachment 5, Table 1. The EPCs are compared to MCP UCLs in Attachment 5, Table 2. ProUCL outputs for the 95-percent upper confidence limits are provided in Attachment 2. The data set for the 0 to 15 foot soil interval for the KMS area is presented in Attachment 5, Table 3, as compared to MCP UCLs. No EPCs for the 0-15 foot interval on the Nemasket Street Lots exceed MCP UCLs. In addition, no individual concentrations contaminants on the KMS area that will become part of the athletic field exceed MCP UCLs, except for a detected concentration of barium of 18,000 mg/kg (MCP UCL of 10,000 mg/kg). Because of this exceedance, Table 4 in Attachment 5 presents a barium EPC for the KMS area; the EPC is less than its MCP UCL. Due to the lack of UCL exceedances, a permanent solution can be achieved using the selected remedial alternative.

Tables/Attachments

Table 1 – Summary Statistics for Soil Samples - 0 to 6 Foot Interval
Table 2 - Summary Statistics for Soil Samples - 0 to 15 Foot Interval
Table 3 – Summary Statistics for Shallow Groundwater – Nemasket Street Utility Easement
Table 4 – Summary Statistics for Shallow Groundwater – Nemasket Street Lots
Table 5 – Summary of Utility Worker Risks and Hazards

Attachment 1 – Soil Data for Nemasket Street Utility Easement
Attachment 2 – ProUCL Outputs
Attachment 3 – Trench Air Modeling
Attachment 4 – Shortforms and Risk Calculation Spreadsheets
Attachment 5 – Comparison of Nemasket Street Lots and Keith Middle School Soil Data to MCP UCLs

References

MassDEP, 1995. Massachusetts Department of Environmental Protection (MassDEP), 1995. Bureau of Waste Site Cleanup and Office of Research and Standards. Guidance for Disposal Site Risk Characterization In Support of the Massachusetts Contingency Plan. BWSC/ORS-95-141. July 1995.

MassDEP, 2002. Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in Soil. Final Technical Update. May 2002.

MassDEP, 2014a. Massachusetts Contingency Plan, 310 CMR 40.0000, effective date, June 25, 2014.

MassDEP, 2014b. Shortforms for Human Health Risk Assessment under the MCP. January 2014.

EPA, 2013 ProUCL Version 5.0.00 September 2013. http://www.epa.gov/osp/hstl/tsc/software.htm

TABLES

Table 1. Summary Statistics for Soil Samples -- 0-6' bgs
Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-2	S-1/GW-3	UCL*	Background	# of Samples	# of Detects	Freq. of Detects	Min. of Detects (mg/kg)	Max. of Detects (mg/kg)	Location of Max. Detected	Min. of Non-Detects (mg/kg)	Max. of Non-Detects (mg/kg)	Mean Concentration (mg/kg)	EPC (mg/kg)	EPC Rationale
VOCs																
	1,3,5-Trimethylbenzene	100(1)	100(1)	5,000(1)	NA	2	1	50.0%	0.0084	0.0084	TRC TP-7	0.0034	0.0034	5.0E-03	8.3E-03	Maximum of detects
VPH																
	C9-C12 Aliphatics	1,000	1,000	20,000	NA	2	1	50.0%	25	25	TRC TP-7	35	35	2.1E+01	2.1E+01	Mean
	C9-C10 Aromatics	100	100	5,000	NA	2	1	50.0%	25	25	TRC TP-7	35	35	2.1E+01	2.1E+01	Mean
	Ethylbenzene	500	500	10,000	NA	2	1	50.0%	3.8	3.8	TRC TP-7	0.0034	0.0034	1.9E+00	1.9E+00	Mean
	Naphthalene	20	500	10,000	0.5	25	6	24.0%	0.43	36	NM-ROW-3	0.088	4.3	2.6E+00	2.6E+00	Mean
	Toluene	500	500	10,000	NA	2	1	50.0%	1.5	1.5	TRC TP-7	0.0034	0.0034	7.5E-01	7.5E-01	Mean
	Xylenes	100	500	10,000	NA	2	2	100.0%	0.35	19.5	TRC TP-7	--	--	9.9E+00	9.9E+00	Mean
EPH																
	C9-C18 Aliphatics	1,000	1,000	20,000	NA	3	1	33.3%	18	18	TRC TP-7	63	63	2.7E+01	1.8E+01	Maximum of detects
	C19-C36 Aliphatics	3,000	3,000	20,000	NA	3	3	100.0%	41	580	TRC TP-9	--	--	3.9E+02	3.9E+02	Mean
	C11-C22 Aromatics	1,000	1,000	10,000	NA	3	3	100.0%	460	840	TRC TP-9	--	--	6.9E+02	6.9E+02	Mean
SVOCs																
	Acenaphthene	1,000	1,000	10,000	0.5	25	11	44.0%	0.11	8.2	TRC TP-9	0.19	4.3	1.6E+00	1.6E+00	Mean
	Acenaphthylene	600	10	10,000	0.5	25	3	12.0%	0.51	4.4	NM-ROW-2	0.088	4.3	5.8E-01	5.8E-01	Mean
	Anthracene	1,000	1,000	10,000	1	25	19	76.0%	0.25	22	TRC TP-9	0.19	4.3	4.4E+00	4.4E+00	Mean
	Benzo(a)anthracene	7	7	3,000	2	25	23	92.0%	0.45	37	TRC TP-9	0.19	0.38	7.3E+00	1.2E+01	95% Adjusted Gamma UCL
	Benzo(a)pyrene	2	2	300	2	25	23	92.0%	0.46	25	TRC TP-9	0.19	0.38	6.3E+00	1.0E+01	95% Adjusted Gamma UCL
	Benzo(b)fluoranthene	7	7	3,000	2	25	24	96.0%	0.4	36	TRC TP-9	0.19	0.19	8.3E+00	1.4E+01	95% Adjusted Gamma UCL
	Benzo(g,h,i)perylene	1,000	1,000	10,000	1	25	21	84.0%	0.4	14	TRC TP-9	0.19	4.3	3.1E+00	3.1E+00	Mean
	Benzo(k)fluoranthene	70	70	10,000	1	25	22	88.0%	0.25	14	TRC TP-9	0.19	4.3	3.1E+00	3.1E+00	Mean
	Chrysene	70	70	10,000	2	25	23	92.0%	0.49	36	TRC TP-9	0.19	0.38	7.5E+00	7.5E+00	Mean
	Dibenz(a,h)anthracene	0.7	0.7	300	0.5	25	10	40.0%	0.1825	6.1	TRC TP-9	0.088	4.3	1.1E+00	1.1E+00	Mean
	Fluoranthene	1,000	1,000	10,000	4	25	25	100.0%	0.19	82	TRC TP-9	--	--	1.6E+01	1.6E+01	Mean
	Fluorene	1,000	1,000	10,000	1	25	15	60.0%	0.089	13	NM-ROW-3	0.19	4.3	2.5E+00	2.5E+00	Mean
	Indeno(1,2,3-cd)pyrene	7	7	3000	1	25	21	84.0%	0.41	15	TRC TP-9	0.19	4.3	3.6E+00	3.6E+00	Mean
	2-Methylnaphthalene	80	300	5,000	0.5	25	5	20.0%	1.5	9	NM-ROW-3	0.088	4.3	1.1E+00	1.1E+00	Mean
	Phenanthrene	500	500	10,000	3	25	24	96.0%	0.43	82	TRC TP-9	0.19	0.19	1.7E+01	1.7E+01	Mean
	Pyrene	1,000	1,000	10,000	4	25	22	88.0%	0.66	75	TRC TP-9	0.11	0.38	1.4E+01	1.4E+01	Mean
PCBs																
	Total PCBs	1	1	100	NA	44	44	100.0%	0.27	127.6	SB-NM-25	--	--	1.7E+01	3.5E+01	95% Chebyshev (Mean, Sd) UCL
TEQ Summation																
	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	3.0E-03	NA	2	2	100.0%	3.3E-04	6.4E-04	SB-NM-25	--	--	4.9E-04	6.4E-04	Maximum of detects
Metals, total																
	Arsenic	20	20	500	20	38	33	86.8%	1.81	83	NS6,7,8,9	2.6	2.8	1.5E+01	1.5E+01	Mean
	Barium	1,000	1,000	10,000	50	38	38	100.0%	19	7500	SB-NM-25	--	--	9.9E+02	9.9E+02	Mean
	Beryllium	90	90	2,000	0.4	20	1	5.0%	0.45	0.45	NM-ROW-4	0.26	0.54	1.7E-01	1.7E-01	Mean
	Cadmium	70	70	1000	2	38	34	89.5%	0.31	30	NS 21,22,23	0.26	0.28	5.3E+00	5.3E+00	Mean
	Chromium (III)	1,000	1,000	10,000	30	38	38	100.0%	5	385	NS2, 3	--	--	9.9E+01	9.9E+01	Mean
	Lead	200	200	6,000	100	38	38	100.0%	41	4900	NS 18,19,20	--	--	1.0E+03	1.4E+03	95% Adjusted Gamma UCL
	Mercury	20	20	300	0.3	38	38	100.0%	0.063	2.6	SB-NM-25	--	--	8.4E-01	8.4E-01	Mean
	Nickel	600	600	10,000	20	20	20	100.0%	2.8	65	NM-ROW-2	--	--	2.8E+01	2.8E+01	Mean
	Silver	100	100	2,000	0.6	33	13	39.4%	0.38	20	SB-NM-25	0.06	3.2	1.3E+00	1.3E+00	Mean
	Vanadium	400	400	7,000	30	20	20	100.0%	8.8	210	NM-ROW-4	--	--	6.4E+01	6.4E+01	Mean
	Zinc	1,000	1,000	10,000	100	20	20	100.0%	40	2500	SB-NM-25	--	--	6.7E+02	6.7E+02	Mean

Notes:

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

NA - Not applicable.

Boxed maxima exceed natural soil background.

VOCs - Volatile Organic Compounds.

EPH - Extractable Petroleum Hydrocarbons.

VPH - Volatile Petroleum Hydrocarbons.

SVOCs - Semi-Volatile Organic Compounds.

PCBs - Polychlorinated Biphenyls.

(1) Standard for C9-C10 aliphatics used.

EPC - Exposure Point Concentration.

UCL* - Upper concentration limit.

UCL - Upper confidence limit.

* - Background Concentration for natural soil.

EMPCs - Estimated Maximum Possible Concentrations.

TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.

Table 2. Summary Statistics for Soil Samples -- 0-15' bgs
Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-2	S-1/GW-3	UCL*	Background	# of Samples	# of Detects	Freq. of Detects	Min. of Detects (mg/kg)	Max. of Detects (mg/kg)	Location of Max. Detected	Min. of Non-Detects (mg/kg)	Max. of Non-Detects (mg/kg)	Mean Concentration (mg/kg)	EPC (mg/kg)	EPC Rationale
VOCs																
	1,3,5-Trimethylbenzene	100(1)	100(1)	5,000(1)	NA	2	1	50.0%	0.0084	0.0084	TRC TP-7	0.0034	0.0034	5.0E-03	8.4E-03	Maximum of detects
VPH																
	C9-C12 Aliphatics	1,000	1,000	20,000	NA	2	1	50.0%	25	25	TRC TP-7	35	35	2.1E+01	2.1E+01	Mean
	C9-C10 Aromatics	100	100	5,000	NA	2	1	50.0%	25	25	TRC TP-7	35	35	2.1E+01	2.1E+01	Mean
	Ethylbenzene	500	500	10,000	NA	2	1	50.0%	3.8	3.8	TRC TP-7	0.0034	0.0034	1.9E+00	1.9E+00	Mean
	Naphthalene	20	500	10,000	0.5	29	6	20.7%	0.43	36	NM-ROW-3	0.088	4.3	2.3E+00	2.3E+00	Mean
	Toluene	500	500	10,000	NA	2	1	50.0%	1.5	1.5	TRC TP-7	0.0034	0.0034	7.5E-01	7.5E-01	Mean
	Xylenes	100	500	10,000	NA	2	2	100.0%	0.35	19.5	TRC TP-7	--	--	9.9E+00	9.9E+00	Mean
EPH																
	C9-C18 Aliphatics	1,000	1,000	20,000	NA	3	1	33.3%	18	18	TRC TP-7	63	63	2.7E+01	1.8E+01	Maximum of detects
	C19-C36 Aliphatics	3,000	3,000	20,000	NA	3	3	100.0%	41	580	TRC TP-9	--	--	3.9E+02	3.9E+02	Mean
	C11-C22 Aromatics	1,000	1,000	10,000	NA	3	3	100.0%	460	840	TRC TP-9	--	--	6.9E+02	6.9E+02	Mean
SVOCs																
	Acenaphthene	1,000	1,000	10,000	0.5	29	11	37.9%	0.11	8.2	TRC TP-9	0.19	4.3	1.4E+00	1.4E+00	Mean
	Acenaphthylene	600	10	10,000	0.5	29	3	10.3%	0.51	4.4	NM-ROW-2	0.088	4.3	5.3E-01	5.3E-01	Mean
	Anthracene	1,000	1,000	10,000	1	29	19	65.5%	0.25	22	TRC TP-9	0.19	4.3	3.8E+00	3.8E+00	Mean
	Benzo(a)anthracene	7	7	3,000	2	29	23	79.3%	0.45	37	TRC TP-9	0.19	0.77	6.3E+00	1.1E+01	95% Adjusted Gamma UCL
	Benzo(a)pyrene	2	2	300	2	29	23	79.3%	0.46	25	TRC TP-9	0.19	0.77	5.4E+00	8.9E+00	95% Adjusted Gamma UCL
	Benzo(b)fluoranthene	7	7	3,000	2	29	24	82.8%	0.4	36	TRC TP-9	0.19	0.77	7.2E+00	1.2E+01	95% Adjusted Gamma UCL
	Benzo(g,h,i)perylene	1,000	1,000	10,000	1	29	21	72.4%	0.4	14	TRC TP-9	0.19	4.3	2.7E+00	2.7E+00	Mean
	Benzo(k)fluoranthene	70	70	10,000	1	29	22	75.9%	0.25	14	TRC TP-9	0.19	4.3	2.7E+00	2.7E+00	Mean
	Chrysene	70	70	10,000	2	29	23	79.3%	0.49	36	TRC TP-9	0.19	0.77	6.5E+00	6.5E+00	Mean
	Dibenz(a,h)anthracene	0.7	0.7	300	0.5	29	10	34.5%	0.1825	6.1	TRC TP-9	0.088	4.3	9.8E-01	9.8E-01	Mean
	Fluoranthene	1,000	1,000	10,000	4	29	25	86.2%	0.19	82	TRC TP-9	0.21	0.77	1.4E+01	1.4E+01	Mean
	Fluorene	1,000	1,000	10,000	1	29	15	51.7%	0.089	13	NM-ROW-3	0.19	4.3	2.2E+00	2.2E+00	Mean
	Indeno(1,2,3-cd)pyrene	7	7	3000	1	29	21	72.4%	0.41	15	TRC TP-9	0.19	4.3	3.1E+00	3.1E+00	Mean
	2-Methylnaphthalene	80	300	5,000	0.5	29	5	17.2%	1.5	9	NM-ROW-3	0.088	4.3	1.0E+00	1.0E+00	Mean
	Phenanthrene	500	500	10,000	3	29	24	82.8%	0.43	82	TRC TP-9	0.19	0.77	1.5E+01	1.5E+01	Mean
	Pyrene	1,000	1,000	10,000	4	29	22	75.9%	0.66	75	TRC TP-9	0.11	0.77	1.2E+01	1.2E+01	Mean
PCBs																
	Total PCBs	1	1	100	NA	48	47	97.9%	0.118	127.6	SB-NM-25	0.173	0.173	1.5E+01	3.2E+01	95% Chebyshev (Mean, Sd) UCL
TEQ Summation^																
	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	3.0E-03	NA	2	2	100.0%	3.3E-04	6.4E-04	SB-NM-25	--	--	4.9E-04	6.4E-04	Maximum of detects
Metals, total																
	Arsenic	20	20	500	20	42	33	78.6%	1.81	83	NS6,7,8,9	2.6	12	1.4E+01	1.4E+01	Mean
	Barium	1,000	1,000	10,000	50	42	42	100.0%	19	7500	SB-NM-25	--	--	9.0E+02	9.0E+02	Mean
	Beryllium	90	90	2,000	0.4	24	1	4.2%	0.45	0.45	NM-ROW-4	0.26	1.2	2.1E-01	2.1E-01	Mean
	Cadmium	70	70	1000	2	42	35	83.3%	0.31	30	NS 21,22,23	0.26	1.2	4.9E+00	4.9E+00	Mean
	Chromium (III)	1,000	1,000	10,000	30	42	42	100.0%	5	385	NS2, 3	--	--	9.1E+01	9.1E+01	Mean
	Lead	200	200	6,000	100	42	42	100.0%	35	4900	NS 18,19,20	--	--	9.3E+02	1.3E+03	95% Adjusted Gamma UCL
	Mercury	20	20	300	0.3	42	39	92.9%	0.063	2.6	SB-NM-25	0.01	0.11	7.7E-01	7.7E-01	Mean
	Nickel	600	600	10,000	20	24	24	100.0%	2.8	65	NM-ROW-2	--	--	2.5E+01	2.5E+01	Mean
	Silver	100	100	2,000	0.6	37	13	35.1%	0.38	20	SB-NM-25	0.06	3.2	1.2E+00	1.2E+00	Mean
	Vanadium	400	400	7,000	30	24	24	100.0%	8.8	210	NM-ROW-4	--	--	5.6E+01	5.6E+01	Mean
	Zinc	1,000	1,000	10,000	100	24	24	100.0%	20	2500	SB-NM-25	--	--	5.7E+02	5.7E+02	Mean

Notes:

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

NA - Not applicable.

Boxed maxima exceed natural soil background.

VOCs - Volatile Organic Compounds.

EPH - Extractable Petroleum Hydrocarbons.

VPH - Volatile Petroleum Hydrocarbons.

SVOCs - Semi-Volatile Organic Compounds.

PCBs - Polychlorinated Biphenyls.

(1) Standard for C9-C10 aliphatics used.

EPC - Exposure Point Concentration.

UCL* - Upper concentration limit.

UCL - Upper confidence limit.

* - Background Concentration for natural soil.

EMPCs - Estimated Maximum Possible Concentrations.

TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.

Table 3. Summary Statistics for Shallow Groundwater Samples
Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	Sample Location:			Nemasket Street Utility Easement						EPC (ug/L)	EPC Rationale
		Sample ID:			MW-37		MW-39		MW-3			
		Sample Date:			1/13/2011	12/1/2011	1/13/2011 combo	12/1/2011 combo	10/25/2013 combo	5/22/2014 combo		
		GW-2	GW-3	UCL*								
VOCs												
(ug/L)	Trichloroethene	5	5,000	50,000	NA	**1.1**	NA	1.0 U	NA	NA	1.1	Maximum of Detects
Metals, total												
(ug/L)	Arsenic	NS	900	9,000	0.40 U	NA	0.40 U	NA	NA	NA	NA	Dissolved Result Used
	Barium	NS	50,000	100,000	**170**	NA	**50**	NA	NA	NA	NA	Dissolved Result Used
	Chromium	NS	300	3,000	1.0 U	NA	**0.95 J**	NA	NA	NA	NA	Dissolved Result Used
	Lead	NS	10	150	1.0 U	NA	1.0 U	NA	NA	NA	NA	Dissolved Result Used
	Nickel	NS	200	2,000	**8.9**	NA	**4.0 J**	NA	NA	NA	NA	Dissolved Result Used
	Zinc	NS	900	50,000	**45**	NA	**24**	NA	NA	NA	NA	Dissolved Result Used
Metals, dissolved												
(ug/L)	Arsenic	NS	900	9,000	0.40 U	NA	0.40 U	NA	**0.925**	**0.64**	0.925	Maximum of Detects
	Barium	NS	50,000	100,000	**150**	NA	**48**	NA	**300**	**125**	300	Maximum of Detects
	Chromium	NS	300	3,000	0.5 U	NA	0.5 U	NA	1.0 U	**1.5**	1.5	Maximum of Detects
	Lead	NS	10	150	1.0 U	NA	1.0 U	NA	1.0 U	**6.3**	6.3	Maximum of Detects
	Nickel	NS	200	2,000	**12**	NA	5.0 U	NA	NA	NA	12	Maximum of Detects
	Zinc	NS	900	50,000	**47**	NA	**21**	NA	NA	NA	47	Maximum of Detects

Notes:
ug/L - micrograms per liter.
NA - Sample not analyzed for the listed analyte.
J - Estimated value.
U - Compound was not detected at specified quantitation limit.
EPC - Exposure Point Concentration.
UCL* - Upper Concentration Limit.
Values in **Bold** indicate the compound was detected.
VOCs - Volatile Organic Compounds.

Table 4. Summary Statistics for Shallow Groundwater Samples
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample Location:			Nemasket Street Lots						EPC (ug/L)	EPC Rationale
		Sample ID:			MW-37		MW-38		MW-39			
		Sample Date:			1/13/2011	12/1/2011	1/13/2011	12/1/2011	1/13/2011 combo	12/1/2011 combo		
		GW-2	GW-3	UCL*								
VOCs												
(ug/L)	Tetrachloroethene	50	30,000	100,000	NA	1.0 U	NA	**13**	NA	1.0 U	13	Maximum of Detects
	Trichloroethene	5	5,000	50,000	NA	**1.1**	NA	**2.4**	NA	1.0 U	2.4	Maximum of Detects
	cis-1,2-Dichloroethene	20	50,000	100,000	NA	1.0 U	NA	**3.0**	NA	1.0 U	3	Maximum of Detects
Metals, total												
(ug/L)	Arsenic	NS	900	9,000	0.40 U	NA	**0.96**	NA	0.40 U	NA	0.96	Maximum of Detects
	Barium	NS	50,000	100,000	**170**	NA	**240**	NA	**50**	NA	240	Maximum of Detects
	Chromium	NS	300	3,000	1.0 U	NA	1.0 U	NA	**0.95 J**	NA	0.95	Maximum of Detects
	Nickel	NS	200	2,000	**8.9**	NA	**6.1**	NA	**4.0 J**	NA	NA	Dissolved Result Used
	Zinc	NS	900	50,000	**45**	NA	**37**	NA	**24**	NA	NA	Dissolved Result Used
Metals, dissolved												
(ug/L)	Arsenic	NS	900	9,000	0.40 U	NA	**0.93**	NA	0.40 U	NA	NA	Total Result Used
	Barium	NS	50,000	100,000	**150**	NA	**240**	NA	**48**	NA	NA	Total Result Used
	Nickel	NS	200	2,000	**12**	NA	**6.2**	NA	5.0 U	NA	12	Maximum of Detects
	Zinc	NS	900	50,000	**47**	NA	**30**	NA	**21**	NA	47	Maximum of Detects

Notes:
ug/L - micrograms per liter.
NA - Sample not analyzed for the listed analyte.
U - Compound was not detected at specified quantitation limit.
J - Estimated value.
EPC - Exposure Point Concentration.
UCL* - Upper Concentration Limit.
Values in **Bold** indicate the compound was detected.
VOCs - Volatile Organic Compounds.

Table 5
Summary of Utility Worker Risks and Hazards
Nemasket Street Utility Easement and Nemasket Street Lots
New Bedford, Massachusetts

Exposure Point	Scenario/ Receptor	Exposure Media	Exposure Pathway	ELCR	HI	Major contributors to risk/hazard
Nemasket Street Utility Easement	1-Day Emergency Utility Worker	0-6' Soil	Ingestion	4E-07	6E-01	N/A
			Dermal	3E-07	4E-01	
			Inhalation	2E-08	6E-02	
		Trench Air	Inhalation	1E-10	3E-03	
		Shallow Groundwater	Dermal	2E-09	6E-03	
			Total	7E-07	1E+00	
		0-15' Soil	Ingestion	3E-07	6E-01	N/A
			Dermal	3E-07	4E-01	
			Inhalation	2E-08	5E-02	
		Trench Air	Inhalation	1E-10	3E-03	
		Shallow Groundwater	Dermal	2E-09	6E-03	
			Total	7E-07	1E+00	
Nemasket Street Lots	6-Month Utility Worker	Trench Air	Inhalation	1E-09	7E-03	N/A
		Shallow Groundwater	Dermal	1E-08	2E-02	
			Total	2E-08	3E-02	

Notes
Bolded values exceed a cancer risk of 1E-05 or a target organ HI of 1.
HI - Hazard Index
ELCR - Excess Lifetime Cancer Risk
N/A - Not Applicable

ATTACHMENT 1

SOIL DATA FOR NEMASKET STREET UTILITY EASEMENT

Table 1. Summary of Analytical Results for Soil Samples -- 0-6' bgs
Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				IW-1	IW-2	NM-ROW-1			NM-ROW-2			NM-ROW-3			NM-ROW-4			SB-NM-25		
		Sample Depth (ft.):				0-0.5	0-0.5	0-1	1-3	5-7	0-1	1-3	5-7	0-1	1-3	5-7	0-1	1-3	5-7	0-1	1-3	3-5
		Sample Date:				12/23/2004	12/23/2004	3/24/2011	3/24/2011	3/24/2011 combo	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	12/17/10	12/17/10	12/17/10 combo
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																	
VOCs																						
(mg/kg)	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																						
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	20	500	20	1,000	0.088 U	0.11 U	0.19 U	0.38 U	0.22 U	0.38 U	**11**	**0.43**	0.43 U	0.20 U	**36**	0.18 U	0.40 U	1.8 U	0.93 U	4.3 U	2.8 U
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																						
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																						
(mg/kg)	Acenaphthene	1,000	1,000	3,000	3,000	**0.11**	**0.14**	0.19 U	0.38 U	0.22 U	**0.77**	**2.6**	0.22 U	0.43 U	0.20 U	**8.1**	**0.37**	0.40 U	1.8 U	0.93 U	4.3 U	2.8 U
	Acenaphthylene	600	10	600	10	0.088 U	0.11 U	0.19 U	0.38 U	0.22 U	0.38 U	**4.4**	0.22 U	0.43 U	0.20 U	**1.7**	0.18 U	0.40 U	1.8 U	0.93 U	4.3 U	2.8 U
	Anthracene	1,000	1,000	3,000	3,000	**0.25**	**0.44**	0.19 U	**0.98**	0.22 U	**1.6**	**9.6**	**0.68**	**0.71**	0.20 U	**21**	**0.67**	**1.1**	**7.7**	**2.2**	4.3 U	**3.2**
	Benzo(a)anthracene	7	7	40	40	**0.92**	**1.4**	0.19 U	**3.1**	**0.83**	**3.9**	**15**	**1.4**	**2.2**	**0.45**	**20**	**2.4**	**3.6**	**12**	**7.6**	**5.6**	**8.0**
	Benzo(a)pyrene	2	2	7	7	**0.93**	**1.4**	0.19 U	**2.9**	**1.2**	**3.6**	**14**	**1.3**	**1.9**	**0.46**	**17**	**2.2**	**3.0**	**8.9**	**11**	**6.8**	**9.5**
	Benzo(b)fluoranthene	7	7	40	40	**1.4**	**2.3**	0.19 U	**3.5**	**1.9**	**4.6**	**17**	**1.5**	**2.6**	**0.56**	**20**	**2.8**	**3.3**	**10**	**14**	**10**	**14**
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**0.49**	**0.82**	0.19 U	**1.6**	**0.58**	**1.8**	**5.2**	**0.57**	**0.84**	**0.40**	**6.0**	**1.6**	**1.9**	**4.6**	**4.3**	4.3 U	**4.4**
	Benzo(k)fluoranthene	70	70	400	400	**0.45**	**0.56**	0.19 U	**1.5**	**0.4025 J**	**1.8**	**7.0**	**0.61**	**1.0**	**0.25**	**7.1**	**1.1**	**1.2**	**4.4**	**5.0**	4.3 U	**5.0**
	Chrysene	70	70	400	400	**8.8**	**1.0**	0.19 U	**3.3**	**1**	**3.9**	**14**	**1.4**	**2.2**	**0.49**	**18**	**2.6**	**3.7**	**11**	**8.5**	**5.3**	**7.3**
	Dibenz(a,h)anthracene	0.7	0.7	4	4	0.088 U	0.11 U	0.19 U	0.38 U	**0.1825 J**	**0.43**	2.0 U	0.22 U	0.43 U	0.20 U	**1.7**	**0.44**	**0.56**	1.8 U	**1.3**	4.3 U	2.8 U
	Fluoranthene	1,000	1,000	3,000	3,000	**2.2**	**3.0**	**0.19**	**5.2**	**0.97**	**7.4**	**30**	**2.5**	**3.8**	**0.88**	**50**	**2.8**	**5.2**	**25**	**10**	**13**	**18**
	Fluorene	1,000	1,000	3,000	3,000	**0.089**	**0.14**	0.19 U	**0.41**	0.22 U	**0.70**	**6.1**	**0.33**	0.43 U	0.20 U	**13**	**0.38**	**0.56**	**2.8**	0.93 U	4.3 U	2.8 U
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**0.55**	**0.78**	0.19 U	**1.8**	**0.84**	**2.1**	**6.5**	**0.69**	**0.99**	**0.41**	**7.6**	**1.7**	**2.1**	**5.7**	**5.1**	4.3 U	**5.4**
	2-Methylnaphthalene	80	300	80	500	0.088 U	0.11 U	0.19 U	0.38 U	0.22 U	0.38 U	**4.7**	0.22 U	0.43 U	0.20 U	**9.0**	0.18 U	0.40 U	1.8 U	0.93 U	4.3 U	2.8 U
	Phenanthrene	500	500	1,000	1,000	**1.4**	**1.9**	0.19 U	**4.3**	**0.465**	**6.6**	**41**	**2.7**	**3.6**	**0.43**	**77**	**3.7**	**5.5**	**24**	**11**	**8.0**	**13**
	Pyrene	1,000	1,000	3,000	3,000	**1.6**	0.11 U	0.19 U	**4.8**	**0.66**	**4.9**	**22**	**1.9**	**2.8**	**0.86**	**45**	**2.5**	**6.2**	**19**	**14**	**8.2**	**12**
PCBs																						
(mg/kg)	Total PCBs	1	1	4	4	**0.27**	**5.71**	**1.54 J**	**17.0 J**	**1.239 J**	**3.83 J**	**23.9 J**	**0.806 J**	**3.82 J**	**0.399 J**	**0.832 J**	**0.767 J**	**61.9 J**	**62.3 J**	**23.74 J**	**127.6 J**	**61.305 J**
TEQ Summation																						
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																						
(mg/kg)	Arsenic	20	20	20	20	**1.81**	**6.38**	2.8 U	**29**	**15.5**	**3.4**	**7.4**	**17**	**3.5**	2.8 U	**12**	2.6 U	**6.2**	**15**	**15**	**16**	**12**
	Barium	1,000	1,000	3,000	3,000	**19**	**584**	**40**	**710**	**450**	**440**	**780**	**380**	**440**	**63**	**730**	**30**	**380**	**2,000**	**7,500**	**4,100**	**2,000**
	Beryllium	90	90	200	200	NA	NA	0.28 U	0.28 U	0.325 U	0.28 U	0.29 U	0.32 U	0.31 U	0.28 U	0.34 U	0.26 U	0.29 U	**0.45**	0.35 U	0.40 U	0.54 U
	Cadmium	70	70	100	100	**0.81**	**3.77**	0.28 U	**3.4**	**9.4**	**1.4**	**2.1**	**2.5**	**1.3**	0.28 U	**1.9**	0.26 U	**1.3**	**7.1**	**11**	**11**	**4.9**
	Chromium	100	100	200	200	**7.14**	**57**	**9.1**	**65**	**26**	**80**	**81**	**44**	**110**	**20**	**140**	**5.0**	**32**	**370**	**230**	**300**	**180**
	Lead	200	200	600	600	**44**	**560**	**100**	**860**	**760**	**370**	**1,100**	**2,000**	**370**	**380**	**420**	**83**	**610**	**2,000**	**1,500**	**1,500**	**1,100**
	Mercury	20	20	30	30	**0.063**	**0.835**	**0.076**	**1.6**	**0.74**	**0.25**	**1.1**	**1.5**	**0.73**	**0.12**	**0.32**	**0.16**	**0.73**	**1.0**	**1.8**	**2.6**	**1.5**
	Nickel	600	600	1000	1000	NA	NA	**5.3**	**28**	**34.5**	**12**	**27**	**65**	**26**	**12**	**41**	**2.8**	**14**	**57**	**61**	**59**	**49**
	Silver	100	100	200	200	0.06 U	**0.38**	0.55 U	0.56 U	0.655 U	0.56 U	0.59 U	3.2 U	0.62 U	0.57 U	0.67 U	0.52 U	0.58 U	0.68 U	0.69 U	**20**	1.1 U
	Vanadium	400	400	700	700	NA	NA	**13**	**46**	**24.5**	**67**	**60**	**44**	**63**	**19**	**85**	**8.8**	**28**	**210**	**140**	**150**	**120**
	Zinc	1,000	1,000	3,000	3,000	NA	NA	**40**	**500**	**570**	**240**	**550**	**1,000**	**250**	**44**	**640**	**46**	**330**	**880**	**2,500**	**1,900**	**1,600**

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
ND - Not detected.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
UA - Unknown.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards for C9-C10 aromatics used.

Table 1. Summary of Analytical Results for Soil Samples -- 0-6' bgs
Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-25		SB-NM-36		SB-NM-37	SB-NM-38		TRC TP-7	TRC TP-9		NS2		NS2, 3		NS4	NS5	
		Sample Depth (ft.):				0-1	1-3	0-1	1-3	0-1	0-1	1-3	0-3	3-5	5-7	0.5-4	4-8.5	Shallow	Deep	0.2-4	0.2-4	4-8.5
		Sample Date:				06/10/2011	06/10/2011	6/10/2011	6/10/2011 combo	6/10/2011	7/6/2011	7/6/2011	10/28/2010	10/29/2010	10/29/2010	9/24/2004	9/24/2004	9/24/2004	9/24/2004	9/24/2004	9/24/2004	9/24/2004
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																	
VOCs																						
(mg/kg)	1,3,5-Trimethylbenzene	100[1]	100[1]	500[1]	500[1]	NA	NA	NA	NA	NA	NA	NA	**0.0084**	0.0034 U	NA	NA	NA	NA	NA	NA	NA	NA
VPH																						
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	**25**	35 U	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	**25**	35 U	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	**3.8**	0.0034 U	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	20	500	20	1,000	NA	NA	0.37 U	0.465 U	0.20 U	0.39 U	0.38 U	**2.9**	**2.9**	**5.6**	NA	NA	NA	NA	NA	NA	NA
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	**1.5**	0.0034 U	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	**20**	**0.35**	NA	NA	NA	NA	NA	NA	NA	NA
EPH																						
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	**18**	63 U	63 U	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	**41**	**580**	**560**	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	**460**	**840**	**780**	NA	NA	NA	NA	NA	NA	NA
SVOCs																						
(mg/kg)	Acenaphthene	1,000	1,000	3,000	3,000	NA	NA	0.37 U	**0.355 J**	**0.22**	0.39 U	0.38 U	**6.1**	**6.3**	**8.2**	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	600	10	600	10	NA	NA	0.37 U	0.465 U	0.20 U	0.39 U	0.38 U	**0.51**	0.63 U	0.63 U	NA	NA	NA	NA	NA	NA	NA
	Anthracene	1,000	1,000	3,000	3,000	NA	NA	**0.44**	**1.4**	**0.59**	0.39 U	0.38 U	**10**	**22**	**22**	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	7	7	40	40	NA	NA	**1.2**	**3.4**	**1.2**	**0.59**	0.38 U	**22**	**37**	**28**	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	2	2	7	7	NA	NA	**1.0**	**2.5**	**0.96**	**0.60**	0.38 U	**17**	**25**	**23**	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	7	7	40	40	NA	NA	**1.3**	**3.6**	**1.3**	**0.95**	**0.40**	**25**	**36**	**30**	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	NA	NA	**0.59**	**0.99**	**0.80**	0.39 U	0.38 U	**11**	**13**	**14**	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	70	70	400	400	NA	NA	**0.49**	**1.2**	**0.46**	**0.40**	0.38 U	**9.1**	**14**	**12**	NA	NA	NA	NA	NA	NA	NA
	Chrysene	70	70	400	400	NA	NA	**1.2**	**3.3**	**1.2**	**0.73**	0.38 U	**25**	**36**	**28**	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	0.7	0.7	4	4	NA	NA	0.37 U	0.465 U	**0.23**	0.39 U	0.38 U	**3.5**	**5.8**	**6.1**	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	1,000	1,000	3,000	3,000	NA	NA	**2.1**	**5.7**	**2.6**	**1.3**	**0.60**	**57**	**82**	**64**	NA	NA	NA	NA	NA	NA	NA
	Fluorene	1,000	1,000	3,000	3,000	NA	NA	0.37 U	**0.46 J**	**0.28**	0.39 U	0.38 U	**7.0**	**13**	**13**	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	7	40	40	NA	NA	**0.72**	**1.25**	**0.91**	0.39 U	0.38 U	**11**	**15**	**15**	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	80	300	80	500	NA	NA	0.37 U	0.465 U	0.20 U	0.39 U	0.38 U	**1.5**	**2.2**	**3.5**	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	500	500	1,000	1,000	NA	NA	**1.8**	**5.3**	**2.5**	**0.90**	**0.61**	**54**	**82**	**74**	NA	NA	NA	NA	NA	NA	NA
	Pyrene	1,000	1,000	3,000	3,000	NA	NA	**2.3**	**5.3**	**2.4**	**0.85**	0.38 U	**54**	**75**	**60**	NA	NA	NA	NA	NA	NA	NA
PCBs																						
(mg/kg)	Total PCBs	1	1	4	4	NA	NA	**8.7**	**14**	**3.0**	**0.32**	**1.1**	NA	**26**	NA	ND	**2.04**	NA	NA	**4.92**	ND	**2.99**
TEQ Summation																						
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	**3.3E-04**	**6.4E-04**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																						
(mg/kg)	Arsenic	20	20	20	20	NA	NA	**4.8**	**12**	**3.6**	2.8 U	2.6 U	NA	NA	NA	NA	NA	**63**	**35**	NA	NA	NA
	Barium	1,000	1,000	3,000	3,000	NA	NA	**680**	**1,050**	**100**	**36**	**40**	NA	NA	NA	NA	NA	**3,860**	**2,030**	NA	NA	NA
	Beryllium	90	90	200	200	NA	NA	0.28 U	0.34 U	0.30 U	0.28 U	0.26 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	70	70	100	100	NA	NA	**1.7**	**3.1**	**0.74**	**0.31**	0.26 U	NA	NA	NA	NA	NA	**7.05**	**5.55**	NA	NA	NA
	Chromium	100	100	200	200	NA	NA	**67**	**89**	**35**	**11**	**10**	NA	NA	NA	NA	NA	**86**	**385**	NA	NA	NA
	Lead	200	200	600	600	NA	NA	**480**	**740**	**220**	**41**	**47**	NA	NA	NA	NA	NA	**1,550**	**3,900**	NA	NA	NA
	Mercury	20	20	30	30	NA	NA	**0.82**	**1.3**	**0.38**	**0.064**	**0.13**	NA	NA	NA	NA	NA	**0.677**	**0.416**	NA	NA	NA
	Nickel	600	600	1000	1000	NA	NA	**17**	**25.5**	**9.7**	**7.7**	**7.5**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	100	100	200	200	NA	NA	0.56 U	0.68 U	0.59 U	0.56 U	0.52 U	NA	NA	NA	NA	NA	**0.67**	**0.75**	NA	NA	NA
	Vanadium	400	400	700	700	NA	NA	**59**	**78**	**32**	**13**	**11**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	1,000	1,000	3,000	3,000	NA	NA	**360**	**1,550**	**320**	**46**	**41**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
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ND - Not detected.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
UA - Unknown.
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VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards for C9-C10 aromatics used.

Table 1. Summary of Analytical Results for Soil Samples -- 0-6' bgs
Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				NS4,5		NS6	NS7	NS8	NS9	NS6,7,8,9		NS10	NS11			NS12		Comp NS10,11,12	
		Sample Depth (ft.):				Shallow	Deep	0.2-4	0.3-4	0.3-4	0-4	Shallow	Deep	0.2-4	0-4	4-9	4-9	0-4	4-9	Shallow	Deep
		Sample Date:				9/24/2004	9/24/2004	9/28/2004	9/28/2004	9/28/2004	9/28/2004	9/28/2004	9/28/2004	9/28/2004	9/28/2004	9/29/2004	9/29/2004 Field Dup	9/29/2004	9/29/2004	9/29/2004	9/29/2004
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																
VOCs																					
(mg/kg)	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																					
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	20	500	20	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																					
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																					
(mg/kg)	Acenaphthene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	600	10	600	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	2	2	7	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	70	70	400	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	70	70	400	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	0.7	0.7	4	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	80	300	80	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																					
(mg/kg)	Total PCBs	1	1	4	4	NA	NA	**2.145**	**8.74**	**3.30**	**14.16**	NA	NA	**5.38**	**3.00**	**2.10**	**1.86**	**61**	**3.50**	NA	NA
TEQ Summation																					
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																					
(mg/kg)	Arsenic	20	20	20	20	**20**	**27**	NA	NA	NA	NA	**20**	**83**	NA	NA	NA	NA	NA	NA	**19**	**11**
	Barium	1,000	1,000	3,000	3,000	**656**	**783**	NA	NA	NA	NA	**635**	**3,680**	NA	NA	NA	NA	NA	NA	**602**	**289**
	Beryllium	90	90	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	70	70	100	100	**5.96**	**16**	NA	NA	NA	NA	**5.00**	**11**	NA	NA	NA	NA	NA	NA	**4.12**	**4.70**
	Chromium	100	100	200	200	**55**	**167**	NA	NA	NA	NA	**67**	**244**	NA	NA	NA	NA	NA	NA	**70**	**28**
	Lead	200	200	600	600	**3,260**	**903**	NA	NA	NA	NA	**658**	**1,260**	NA	NA	NA	NA	NA	NA	**572**	**437**
	Mercury	20	20	30	30	**1.03**	**0.531**	NA	NA	NA	NA	**0.64**	**1.03**	NA	NA	NA	NA	NA	NA	**0.51**	**0.32**
	Nickel	600	600	1000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	100	100	200	200	**0.68**	**1.34**	NA	NA	NA	NA	**4.16**	ND	NA	NA	NA	NA	NA	NA	ND	ND
	Vanadium	400	400	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	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.
ND - Not detected.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
UA - Unknown.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards for C9-C10 aromatics used.

Table 1. Summary of Analytical Results for Soil Samples -- 0-6' bgs
Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				NS13		NS15		NS16		NS17	NS15,16,17		NS18	NS 18,19,20		NS-22	NS 21,22,23		NS-25	NS 24,25,26	
		Sample Depth (ft.):				0-4	4-9	0-4	4-8.25	0-4	4-8	0-4	Shallow	Deep	1-4	Shallow	Deep	0-4	Shallow	Deep	0.5-4	Shallow	Deep
		Sample Date:				9/29/2004	9/29/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																		
VOCs																							
(mg/kg)	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																							
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	20	500	20	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																							
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																							
(mg/kg)	Acenaphthene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	600	10	600	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	2	2	7	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	70	70	400	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	70	70	400	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	0.7	0.7	4	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	80	300	80	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																							
(mg/kg)	Total PCBs	1	1	4	4	**9.60**	**7.35**	ND	**17.3**	ND	**8.25**	**12.20**	NA	NA	**16.10**	NA	NA	**2.90**	NA	NA	**98.6**	NA	NA
TEQ Summation																							
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																							
(mg/kg)	Arsenic	20	20	20	20	NA	NA	NA	NA	NA	NA	NA	**10**	**18**	NA	**16**	**26**	NA	**4.0**	**10**	NA	**16**	**15**
	Barium	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	**320**	**160**	NA	**450**	**110**	NA	**110**	**310**	NA	**430**	**560**
	Beryllium	90	90	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	70	70	100	100	NA	NA	NA	NA	NA	NA	NA	**1.50**	**5.00**	NA	**4.10**	**1.0**	NA	**30**	**28**	NA	**2.50**	**2.50**
	Chromium	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	**79**	**43**	NA	**160**	**28.0**	NA	**11**	**42**	NA	**210**	**120**
	Lead	200	200	600	600	NA	NA	NA	NA	NA	NA	NA	**700**	**1,300**	NA	**920**	**4,900**	NA	**370**	**480**	NA	**1,100**	**1,100**
	Mercury	20	20	30	30	NA	NA	NA	NA	NA	NA	NA	**1.10**	**1.40**	NA	**1.10**	**0.38**	NA	**0.33**	**1.20**	NA	**1.90**	**1.60**
	Nickel	600	600	1000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	**1.40**	**1.80**	NA	**0.68**	ND	NA	**1.50**	ND	NA	**1.10**	**0.86**
	Vanadium	400	400	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
ND - Not detected.
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EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards for C9-C10 aromatics used.

Table 2 Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				IW-1	IW-2	NM-ROW-1			NM-ROW-2				NM-ROW-3				NM-ROW-4			
		Sample Depth (ft.):				0-0.5	0-0.5	0-1	1-3	5-7	0-1	1-3	5-7	7.5-8	0-1	1-3	5-7	8.5-10	0-1	1-3	5-7	8-10
		Sample Date:				12/23/2004	12/23/2004	3/24/2011	3/24/2011	3/24/2011 combo	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																	
VOCs																						
(mg/kg)	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																						
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	20	500	20	1,000	0.088 U	0.11 U	0.19 U	0.38 U	0.22 U	0.38 U	**11**	**0.43**	0.59 U	0.43 U	0.20 U	**36**	0.77 U	0.18 U	0.40 U	1.8 U	0.45 U
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																						
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																						
(mg/kg)	Acenaphthene	1,000	1,000	3,000	3,000	**0.11**	**0.14**	0.19 U	0.38 U	0.22 U	**0.77**	**2.6**	0.22 U	0.59 U	0.43 U	0.20 U	**8.1**	0.77 U	**0.37**	0.40 U	1.8 U	0.45 U
	Acenaphthylene	600	10	600	10	0.088 U	0.11 U	0.19 U	0.38 U	0.22 U	0.38 U	**4.4**	0.22 U	0.59 U	0.43 U	0.20 U	**1.7**	0.77 U	0.18 U	0.40 U	1.8 U	0.45 U
	Anthracene	1,000	1,000	3,000	3,000	**0.25**	**0.44**	0.19 U	**0.98**	0.22 U	**1.6**	**9.6**	**0.68**	0.59 U	**0.71**	0.20 U	**21**	0.77 U	**0.67**	**1.1**	**7.7**	0.45 U
	Benzo(a)anthracene	7	7	40	40	**0.92**	**1.4**	0.19 U	**3.1**	**0.83**	**3.9**	**15**	**1.4**	0.59 U	**2.2**	**0.45**	**20**	0.77 U	**2.4**	**3.6**	**12**	0.45 U
	Benzo(a)pyrene	2	2	7	7	**0.93**	**1.4**	0.19 U	**2.9**	**1.2**	**3.6**	**14**	**1.3**	0.59 U	**1.9**	**0.46**	**17**	0.77 U	**2.2**	**3.0**	**8.9**	0.45 U
	Benzo(b)fluoranthene	7	7	40	40	**1.4**	**2.3**	0.19 U	**3.5**	**1.9**	**4.6**	**17**	**1.5**	0.59 U	**2.6**	**0.56**	**20**	0.77 U	**2.8**	**3.3**	**10**	0.45 U
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**0.49**	**0.82**	0.19 U	**1.6**	**0.58**	**1.8**	**5.2**	**0.57**	0.59 U	**0.84**	**0.40**	**6.0**	0.77 U	**1.6**	**1.9**	**4.6**	0.45 U
	Benzo(k)fluoranthene	70	70	400	400	**0.45**	**0.56**	0.19 U	**1.5**	**0.4025 J**	**1.8**	**7.0**	**0.61**	0.59 U	**1.0**	**0.25**	**7.1**	0.77 U	**1.1**	**1.2**	**4.4**	0.45 U
	Chrysene	70	70	400	400	**8.8**	**1.0**	0.19 U	**3.3**	**1**	**3.9**	**14**	**1.4**	0.59 U	**2.2**	**0.49**	**18**	0.77 U	**2.6**	**3.7**	**11**	0.45 U
	Dibenz(a,h)anthracene	0.7	0.7	4	4	0.088 U	0.11 U	0.19 U	0.38 U	**0.1825 J**	**0.43**	2.0 U	0.22 U	0.59 U	0.43 U	0.20 U	**1.7**	0.77 U	**0.44**	**0.56**	1.8 U	0.45 U
	Fluoranthene	1,000	1,000	3,000	3,000	**2.2**	**3.0**	**0.19**	**5.2**	**0.97**	**7.4**	**30**	**2.5**	0.59 U	**3.8**	**0.88**	**50**	0.77 U	**2.8**	**5.2**	**25**	0.45 U
	Fluorene	1,000	1,000	3,000	3,000	**0.089**	**0.14**	0.19 U	**0.41**	0.22 U	**0.70**	**6.1**	**0.33**	0.59 U	0.43 U	0.20 U	**13**	0.77 U	**0.38**	**0.56**	**2.8**	0.45 U
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**0.55**	**0.78**	0.19 U	**1.8**	**0.84**	**2.1**	**6.5**	**0.69**	0.59 U	**0.99**	**0.41**	**7.6**	0.77 U	**1.7**	**2.1**	**5.7**	0.45 U
	2-Methylnaphthalene	80	300	80	500	0.088 U	0.11 U	0.19 U	0.38 U	0.22 U	0.38 U	**4.7**	0.22 U	0.59 U	0.43 U	0.20 U	**9.0**	0.77 U	0.18 U	0.40 U	1.8 U	0.45 U
	Phenanthrene	500	500	1,000	1,000	**1.4**	**1.9**	0.19 U	**4.3**	**0.465**	**6.6**	**41**	**2.7**	0.59 U	**3.6**	**0.43**	**77**	0.77 U	**3.7**	**5.5**	**24**	0.45 U
	Pyrene	1,000	1,000	3,000	3,000	**1.6**	0.11 U	0.19 U	**4.8**	**0.66**	**4.9**	**22**	**1.9**	0.59 U	**2.8**	**0.86**	**45**	0.77 U	**2.5**	**6.2**	**19**	0.45 U
PCBs																						
(mg/kg)	Total PCBs	1	1	4	4	**0.27**	**5.71**	**1.54 J**	**17.0 J**	**1.239 J**	**3.83 J**	**23.9 J**	**0.806 J**	0.173 UJ	**3.82 J**	**0.399 J**	**0.832 J**	**1.013 J**	**0.767 J**	**61.9 J**	**62.3 J**	**1.912 J**
TEQ Summation																						
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																						
(mg/kg)	Arsenic	20	20	20	20	**1.81**	**6.38**	2.8 U	**29**	**15.5**	**3.4**	**7.4**	**17**	8.6 U	**3.5**	2.8 U	**12**	12 U	2.6 U	**6.2**	**15**	6.6 U
	Barium	1,000	1,000	3,000	3,000	**19**	**584**	**40**	**710**	**450**	**440**	**780**	**380**	**190**	**440**	**63**	**730**	**130**	**30**	**380**	**2,000**	**69**
	Beryllium	90	90	200	200	NA	NA	0.28 U	0.28 U	0.325 U	0.28 U	0.29 U	0.32 U	0.86 U	0.31 U	0.28 U	0.34 U	1.2 U	0.26 U	0.29 U	**0.45**	0.66 U
	Cadmium	70	70	100	100	**0.81**	**3.77**	0.28 U	**3.4**	**9.4**	**1.4**	**2.1**	**2.5**	**1.1**	**1.3**	0.28 U	**1.9**	1.2 U	0.26 U	**1.3**	**7.1**	0.66 U
	Chromium	100	100	200	200	**7.14**	**57**	**9.1**	**65**	**26**	**80**	**81**	**44**	**11**	**110**	**20**	**140**	**14**	**5.0**	**32**	**370**	**10**
	Lead	200	200	600	600	**44**	**560**	**100**	**860**	**760**	**370**	**1,100**	**2,000**	**340**	**370**	**380**	**420**	**83**	**83**	**610**	**2,000**	**35**
	Mercury	20	20	30	30	**0.063**	**0.835**	**0.076**	**1.6**	**0.74**	**0.25**	**1.1**	**1.5**	**0.18**	**0.73**	**0.12**	**0.32**	0.11 U	**0.16**	**0.73**	**1.0**	0.066 U
	Nickel	600	600	1000	1000	NA	NA	**5.3**	**28**	**34.5**	**12**	**27**	**65**	**20**	**26**	**12**	**41**	**11**	**2.8**	**14**	**57**	**3.7**
	Silver	100	100	200	200	0.06 U	**0.38**	0.55 U	0.56 U	0.655 U	0.56 U	0.59 U	3.2 U	1.7 U	0.62 U	0.57 U	0.67 U	2.3 U	0.52 U	0.58 U	0.68 U	1.3 U
	Vanadium	400	400	700	700	NA	NA	**13**	**46**	**24.5**	**67**	**60**	**44**	**18**	**63**	**19**	**85**	**17**	**8.8**	**28**	**210**	**15**
	Zinc	1,000	1,000	3,000	3,000	NA	NA	**40**	**500**	**570**	**240**	**550**	**1,000**	**250**	**250**	**44**	**640**	**90**	**46**	**330**	**880**	**24**

Notes:

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

J - Estimated value.

NA - Sample not analyzed for the listed analyte.

ND - Not detected.

NA - Sample not analyzed for the listed analyte.

N/A - Not applicable.

UA - Unknown.

R - Rejected data point due to matrix spike recoveries <10%.

Values in Bold indicate the compound was detected.

VOCs - Volatile Organic Compounds.

VPH - Volatile Petroleum Hydrocarbons.

EPH - Extractable Petroleum Hydrocarbons.

SVOCs - Semivolatile Organic Compounds.

PCBs - Polychlorinated Biphenyls.

EMPCs - Estimated Maximum Possible Concentrations.

TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.

(1) - MCP Method 1 standards for C9-C10 aromatics used.

Table 2 Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-25				SB-NM-25		SB-NM-36		SB-NM-37	SB-NM-38		TRC TP-7	TRC TP-9		NS2		NS2, 3		NS4
		Sample Depth (ft.):				0-1	1-3	3-5	7-8	0-1	1-3	0-1	1-3	0-1	0-1	1-3	0-3	3-5	5-7	0.5-4	4-8.5	Shallow	Deep	0.2-4
		Sample Date:				12/17/10	12/17/10	12/17/10 combo	12/17/10	06/10/2011	06/10/2011	6/10/2011	6/10/2011 combo	6/10/2011	7/6/2011	7/6/2011	10/28/2010	10/29/2010	10/29/2010	9/24/2004	9/24/2004	9/24/2004	9/24/2004	9/24/2004
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																			
VOCs																								
(mg/kg)	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.0084**	0.0034 U	NA	NA	NA	NA	NA	NA
VPH																								
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**25**	35 U	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**25**	35 U	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3.8**	0.0034 U	NA	NA	NA	NA	NA	NA
	Naphthalene	20	500	20	1,000	0.93 U	4.3 U	2.8 U	0.21 U	NA	NA	0.37 U	0.465 U	0.20 U	0.39 U	0.38 U	**2.9**	**2.9**	**5.6**	NA	NA	NA	NA	NA
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.5**	0.0034 U	NA	NA	NA	NA	NA	NA
	Xylenes	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**20**	**0.35**	NA	NA	NA	NA	NA	NA
EPH																								
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**18**	63 U	63 U	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**41**	**580**	**560**	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**460**	**840**	**780**	NA	NA	NA	NA	NA
SVOCs																								
(mg/kg)	Acenaphthene	1,000	1,000	3,000	3,000	0.93 U	4.3 U	2.8 U	0.21 U	NA	NA	0.37 U	**0.355 J**	**0.22**	0.39 U	0.38 U	**6.1**	**6.3**	**8.2**	NA	NA	NA	NA	NA
	Acenaphthylene	600	10	600	10	0.93 U	4.3 U	2.8 U	0.21 U	NA	NA	0.37 U	0.465 U	0.20 U	0.39 U	0.38 U	**0.51**	0.63 U	0.63 U	NA	NA	NA	NA	NA
	Anthracene	1,000	1,000	3,000	3,000	**2.2**	4.3 U	**3.2**	0.21 U	NA	NA	**0.44**	**1.4**	**0.59**	0.39 U	0.38 U	**10**	**22**	**22**	NA	NA	NA	NA	NA
	Benzo(a)anthracene	7	7	40	40	**7.6**	**5.6**	**8.0**	0.21 U	NA	NA	**1.2**	**3.4**	**1.2**	**0.59**	0.38 U	**22**	**37**	**28**	NA	NA	NA	NA	NA
	Benzo(a)pyrene	2	2	7	7	**11**	**6.8**	**9.5**	0.21 U	NA	NA	**1.0**	**2.5**	**0.96**	**0.60**	0.38 U	**17**	**25**	**23**	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	7	7	40	40	**14**	**10**	**14**	0.21 U	NA	NA	**1.3**	**3.6**	**1.3**	**0.95**	**0.40**	**25**	**36**	**30**	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**4.3**	4.3 U	**4.4**	0.21 U	NA	NA	**0.59**	**0.99**	**0.80**	0.39 U	0.38 U	**11**	**13**	**14**	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	70	70	400	400	**5.0**	4.3 U	**5.0**	0.21 U	NA	NA	**0.49**	**1.2**	**0.46**	**0.40**	0.38 U	**9.1**	**14**	**12**	NA	NA	NA	NA	NA
	Chrysene	70	70	400	400	**8.5**	**5.3**	**7.3**	0.21 U	NA	NA	**1.2**	**3.3**	**1.2**	**0.73**	0.38 U	**25**	**36**	**28**	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	0.7	0.7	4	4	**1.3**	4.3 U	2.8 U	0.21 U	NA	NA	0.37 U	0.465 U	**0.23**	0.39 U	0.38 U	**3.5**	**5.8**	**6.1**	NA	NA	NA	NA	NA
	Fluoranthene	1,000	1,000	3,000	3,000	**10**	**13**	**18**	0.21 U	NA	NA	**2.1**	**5.7**	**2.6**	**1.3**	**0.60**	**57**	**82**	**64**	NA	NA	NA	NA	NA
	Fluorene	1,000	1,000	3,000	3,000	0.93 U	4.3 U	2.8 U	0.21 U	NA	NA	0.37 U	**0.46 J**	**0.28**	0.39 U	0.38 U	**7.0**	**13**	**13**	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**5.1**	4.3 U	**5.4**	0.21 U	NA	NA	**0.72**	**1.25**	**0.91**	0.39 U	0.38 U	**11**	**15**	**15**	NA	NA	NA	NA	NA
	2-Methylnaphthalene	80	300	80	500	0.93 U	4.3 U	2.8 U	0.21 U	NA	NA	0.37 U	0.465 U	0.20 U	0.39 U	0.38 U	**1.5**	**2.2**	**3.5**	NA	NA	NA	NA	NA
	Phenanthrene	500	500	1,000	1,000	**11**	**8.0**	**13**	0.21 U	NA	NA	**1.8**	**5.3**	**2.5**	**0.90**	**0.61**	**54**	**82**	**74**	NA	NA	NA	NA	NA
	Pyrene	1,000	1,000	3,000	3,000	**14**	**8.2**	**12**	0.21 U	NA	NA	**2.3**	**5.3**	**2.4**	**0.85**	0.38 U	**54**	**75**	**60**	NA	NA	NA	NA	NA
PCBs																								
(mg/kg)	Total PCBs	1	1	4	4	**23.74 J**	**127.6 J**	**61.305 J**	**0.118 J**	NA	NA	**8.7**	**14**	**3.0**	**0.32**	**1.1**	NA	**26**	NA	ND	**2.04**	NA	NA	**4.92**
TEQ Summation																								
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	**3.3E-04**	**6.4E-04**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																								
(mg/kg)	Arsenic	20	20	20	20	**15**	**16**	**12**	2.9 U	NA	NA	**4.8**	**12**	**3.6**	2.8 U	2.6 U	NA	NA	NA	NA	NA	**63**	**35**	NA
	Barium	1,000	1,000	3,000	3,000	**7,500**	**4,100**	**2,000**	**37**	NA	NA	**680**	**1,050**	**100**	**36**	**40**	NA	NA	NA	NA	NA	**3,860**	**2,030**	NA
	Beryllium	90	90	200	200	0.35 U	0.40 U	0.54 U	0.29 U	NA	NA	0.28 U	0.34 U	0.30 U	0.28 U	0.26 U	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	70	70	100	100	**11**	**11**	**4.9**	0.29 U	NA	NA	**1.7**	**3.1**	**0.74**	**0.31**	0.26 U	NA	NA	NA	NA	NA	**7.05**	**5.55**	NA
	Chromium	100	100	200	200	**230**	**300**	**180**	**15**	NA	NA	**67**	**89**	**35**	**11**	**10**	NA	NA	NA	NA	NA	**86**	**385**	NA
	Lead	200	200	600	600	**1,500**	**1,500**	**1,100**	**37**	NA	NA	**480**	**740**	**220**	**41**	**47**	NA	NA	NA	NA	NA	**1,550**	**3,900**	NA
	Mercury	20	20	30	30	**1.8**	**2.6**	**1.5**	0.010 U	NA	NA	**0.82**	**1.3**	**0.38**	**0.064**	**0.13**	NA	NA	NA	NA	NA	**0.677**	**0.416**	NA
	Nickel	600	600	1000	1000	**61**	**59**	**49**	**5.5**	NA	NA	**17**	**25.5**	**9.7**	**7.7**	**7.5**	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	100	100	200	200	0.69 U	**20**	1.1 U	0.59 U	NA	NA	0.56 U	0.68 U	0.59 U	0.56 U	0.52 U	NA	NA	NA	NA	NA	**0.67**	**0.75**	NA
	Vanadium	400	400	700	700	**140**	**150**	**120**	**14**	NA	NA	**59**	**78**	**32**	**13**	**11**	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	1,000	1,000	3,000	3,000	**2,500**	**1,900**	**1,600**	**20**	NA	NA	**360**	**1,550**	**320**	**46**	**41**	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
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(1) - MCP Method 1 standards for C9-C10 aromatics used.

Table 2 Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				NS5		NS4,5		NS6	NS7	NS8	NS9	NS6,7,8,9		NS10	NS11			NS12	
		Sample Depth (ft.):				0.2-4	4-8.5	Shallow	Deep	0.2-4	0.3-4	0.3-4	0-4	Shallow	Deep	0.2-4	0-4	4-9	4-9	0-4	4-9
		Sample Date:				9/24/2004	9/24/2004	9/24/2004	9/24/2004	9/28/2004	9/28/2004	9/28/2004	9/28/2004	9/28/2004	9/28/2004	9/28/2004	9/28/2004	9/29/2004	9/29/2004 Field Dup	9/29/2004	9/29/2004
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																
VOCs																					
(mg/kg)	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																					
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	20	500	20	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																					
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																					
(mg/kg)	Acenaphthene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	600	10	600	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	2	2	7	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	70	70	400	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	70	70	400	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	0.7	0.7	4	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	80	300	80	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																					
(mg/kg)	Total PCBs	1	1	4	4	ND	**2.99**	NA	NA	**2.145**	**8.74**	**3.30**	**14.16**	NA	NA	**5.38**	**3.00**	**2.10**	**1.86**	**61**	**3.50**
TEQ Summation																					
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																					
(mg/kg)	Arsenic	20	20	20	20	NA	NA	**20**	**27**	NA	NA	NA	NA	**20**	**83**	NA	NA	NA	NA	NA	NA
	Barium	1,000	1,000	3,000	3,000	NA	NA	**656**	**783**	NA	NA	NA	NA	**635**	**3,680**	NA	NA	NA	NA	NA	NA
	Beryllium	90	90	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	70	70	100	100	NA	NA	**5.96**	**16**	NA	NA	NA	NA	**5.00**	**11**	NA	NA	NA	NA	NA	NA
	Chromium	100	100	200	200	NA	NA	**55**	**167**	NA	NA	NA	NA	**67**	**244**	NA	NA	NA	NA	NA	NA
	Lead	200	200	600	600	NA	NA	**3,260**	**903**	NA	NA	NA	NA	**658**	**1,260**	NA	NA	NA	NA	NA	NA
	Mercury	20	20	30	30	NA	NA	**1.03**	**0.531**	NA	NA	NA	NA	**0.64**	**1.03**	NA	NA	NA	NA	NA	NA
	Nickel	600	600	1000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	100	100	200	200	NA	NA	**0.68**	**1.34**	NA	NA	NA	NA	**4.16**	ND	NA	NA	NA	NA	NA	NA
	Vanadium	400	400	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Nemasket Street Utility Easement
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				Comp NS10,11,12		NS13		NS15		NS16		NS17	NS15,16,17		NS18	NS 18,19,20		NS-22	NS 21,22,23		NS-25	NS 24,25,26	
		Sample Depth (ft.):				Shallow	Deep	0-4	4-9	0-4	4-8.25	0-4	4-8	0-4	Shallow	Deep	1-4	Shallow	Deep	0-4	Shallow	Deep	0.5-4	Shallow	Deep
		Sample Date:				9/29/2004	9/29/2004	9/29/2004	9/29/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004	10/1/2004
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																				
VOCs																									
(mg/kg)	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																									
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	20	500	20	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																									
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																									
(mg/kg)	Acenaphthene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	600	10	600	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	2	2	7	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	70	70	400	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	70	70	400	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	0.7	0.7	4	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	7	7	40	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	80	300	80	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																									
(mg/kg)	Total PCBs	1	1	4	4	NA	NA	**9.60**	**7.35**	ND	**17.3**	ND	**8.25**	**12.20**	NA	NA	**16.10**	NA	NA	**2.90**	NA	NA	**98.6**	NA	NA
TEQ Summation																									
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																									
(mg/kg)	Arsenic	20	20	20	20	**19**	**11**	NA	NA	NA	NA	NA	NA	NA	**10**	**18**	NA	**16**	**26**	NA	**4.0**	**10**	NA	**16**	**15**
	Barium	1,000	1,000	3,000	3,000	**602**	**289**	NA	NA	NA	NA	NA	NA	NA	**320**	**160**	NA	**450**	**110**	NA	**110**	**310**	NA	**430**	**560**
	Beryllium	90	90	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	70	70	100	100	**4.12**	**4.70**	NA	NA	NA	NA	NA	NA	NA	**1.50**	**5.00**	NA	**4.10**	**1.0**	NA	**30**	**28**	NA	**2.50**	**2.50**
	Chromium	100	100	200	200	**70**	**28**	NA	NA	NA	NA	NA	NA	NA	**79**	**43**	NA	**160**	**28.0**	NA	**11**	**42**	NA	**210**	**120**
	Lead	200	200	600	600	**572**	**437**	NA	NA	NA	NA	NA	NA	NA	**700**	**1,300**	NA	**920**	**4,900**	NA	**370**	**480**	NA	**1,100**	**1,100**
	Mercury	20	20	30	30	**0.51**	**0.32**	NA	NA	NA	NA	NA	NA	NA	**1.10**	**1.40**	NA	**1.10**	**0.38**	NA	**0.33**	**1.20**	NA	**1.90**	**1.60**
	Nickel	600	600	1000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	100	100	200	200	ND	ND	NA	NA	NA	NA	NA	NA	NA	**1.40**	**1.80**	NA	**0.68**	ND	NA	**1.50**	ND	NA	**1.10**	**0.86**
	Vanadium	400	400	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
NA - Sample not analyzed for the listed analyte.
ND - Not detected.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
UA - Unknown.
R - Rejected data point due to matrix spike recoveries <10%.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards for C9-C10 aromatics used.

ATTACHMENT 2

PROUCL OUTPUTS

	A	B	C	D	E	F	G	H	I	J	K	L
1	**UCL Statistics for Uncensored Full Data Sets**											
2												
3	User Selected Options											
4	Date/Time of Computation			9/5/2014 10:09:23 AM								
5	From File			ProUCL_Import.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	mber of Bootstrap Operations			2000								
9												
10												
11	**Benzo(a)anthracene_0-15 - Easement**											
12												
13	**General Statistics**											
14	Total Number of Observations					29	Number of Distinct Observations					27
15							Number of Missing Observations					2
16	Minimum					0.095	Mean					6.313
17	Maximum					37	Median					2.2
18	SD					9.397	Std. Error of Mean					1.745
19	Coefficient of Variation					1.488	Skewness					2.014
20												
21	**Normal GOF Test**											
22	Shapiro Wilk Test Statistic					0.693	**Shapiro Wilk GOF Test**					
23	5% Shapiro Wilk Critical Value					0.926	Data Not Normal at 5% Significance Level					
24	Lilliefors Test Statistic					0.291	**Lilliefors GOF Test**					
25	5% Lilliefors Critical Value					0.165	Data Not Normal at 5% Significance Level					
26	**Data Not Normal at 5% Significance Level**											
27												
28	**Assuming Normal Distribution**											
29	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
30	95% Student's-t UCL					9.282	95% Adjusted-CLT UCL (Chen-1995)					9.881
31							95% Modified-t UCL (Johnson-1978)					9.39
32												
33	**Gamma GOF Test**											
34	A-D Test Statistic					0.621	**Anderson-Darling Gamma GOF Test**					
35	5% A-D Critical Value					0.806	etected data appear Gamma Distributed at 5% Significance Lev					
36	K-S Test Statistic					0.142	**Kolmogrov-Smirnoff Gamma GOF Test**					
37	5% K-S Critical Value					0.172	etected data appear Gamma Distributed at 5% Significance Lev					
38	**Detected data appear Gamma Distributed at 5% Significance Level**											
39												
40	**Gamma Statistics**											
41	k hat (MLE)					0.547	k star (bias corrected MLE)					0.513
42	Theta hat (MLE)					11.54	Theta star (bias corrected MLE)					12.3
43	nu hat (MLE)					31.72	nu star (bias corrected)					29.78
44	MLE Mean (bias corrected)					6.313	MLE Sd (bias corrected)					8.811
45							Approximate Chi Square Value (0.05)					18.32
46	Adjusted Level of Significance					0.0407	Adjusted Chi Square Value					17.78
47												
48	**Assuming Gamma Distribution**											
49	95% Approximate Gamma UCL (use when n>=50)					10.26	95% Adjusted Gamma UCL (use when n<50)					10.57
50												
51	**Lognormal GOF Test**											
52	Shapiro Wilk Test Statistic					0.97	**Shapiro Wilk Lognormal GOF Test**					
53	5% Shapiro Wilk Critical Value					0.926	Data appear Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic					0.0671	**Lilliefors Lognormal GOF Test**					
55	5% Lilliefors Critical Value					0.165	Data appear Lognormal at 5% Significance Level					
56	**Data appear Lognormal at 5% Significance Level**											
57												
58	**Lognormal Statistics**											
59	Minimum of Logged Data					-2.354	Mean of logged Data					0.697
60	Maximum of Logged Data					3.611	SD of logged Data					1.695
61												

62	**Assuming Lognormal Distribution**											
63					95% H-UCL	25.38			90% Chebyshev (MVUE) UCL			16.83
64					95% Chebyshev (MVUE) UCL	21.02			97.5% Chebyshev (MVUE) UCL			26.84
65					99% Chebyshev (MVUE) UCL	38.26						
66												
67	**Nonparametric Distribution Free UCL Statistics**											
68	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
69												
70	**Nonparametric Distribution Free UCLs**											
71					95% CLT UCL	9.183			95% Jackknife UCL			9.282
72					95% Standard Bootstrap UCL	9.154			95% Bootstrap-t UCL			10.47
73					95% Hall's Bootstrap UCL	9.992			95% Percentile Bootstrap UCL			9.275
74					95% BCA Bootstrap UCL	10.18						
75					90% Chebyshev(Mean, Sd) UCL	11.55			95% Chebyshev(Mean, Sd) UCL			13.92
76					97.5% Chebyshev(Mean, Sd) UCL	17.21			99% Chebyshev(Mean, Sd) UCL			23.68
77												
78	**Suggested UCL to Use**											
79					95% Adjusted Gamma UCL	10.57						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
83	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
84	For additional insight the user may want to consult a statistician.											
85												
86												
87	**Benzo(a)pyrene_0-15 - Easement**											
88												
89	**General Statistics**											
90					Total Number of Observations	29			Number of Distinct Observations			28
91									Number of Missing Observations			2
92					Minimum	0.095			Mean			5.429
93					Maximum	25			Median			1.9
94					SD	7.23			Std. Error of Mean			1.343
95					Coefficient of Variation	1.332			Skewness			1.546
96												
97	**Normal GOF Test**											
98					Shapiro Wilk Test Statistic	0.738			**Shapiro Wilk GOF Test**			
99					5% Shapiro Wilk Critical Value	0.926			Data Not Normal at 5% Significance Level			
100					Lilliefors Test Statistic	0.29			**Lilliefors GOF Test**			
101					5% Lilliefors Critical Value	0.165			Data Not Normal at 5% Significance Level			
102	**Data Not Normal at 5% Significance Level**											
103												
104	**Assuming Normal Distribution**											
105					**95% Normal UCL**				**95% UCLs (Adjusted for Skewness)**			
106					95% Student's-t UCL	7.713			95% Adjusted-CLT UCL (Chen-1995)			8.049
107									95% Modified-t UCL (Johnson-1978)			7.777
108												
109	**Gamma GOF Test**											
110					A-D Test Statistic	0.674			**Anderson-Darling Gamma GOF Test**			
111					5% A-D Critical Value	0.801			etected data appear Gamma Distributed at 5% Significance Lev			
112					K-S Test Statistic	0.14			**Kolmogrov-Smirnoff Gamma GOF Test**			
113					5% K-S Critical Value	0.171			etected data appear Gamma Distributed at 5% Significance Lev			
114	**Detected data appear Gamma Distributed at 5% Significance Level**											
115												
116	**Gamma Statistics**											
117					k hat (MLE)	0.591			k star (bias corrected MLE)			0.552
118					Theta hat (MLE)	9.193			Theta star (bias corrected MLE)			9.828
119					nu hat (MLE)	34.25			nu star (bias corrected)			32.04
120					MLE Mean (bias corrected)	5.429			MLE Sd (bias corrected)			7.304
121									Approximate Chi Square Value (0.05)			20.1
122					Adjusted Level of Significance	0.0407			Adjusted Chi Square Value			19.54

123												
124	**Assuming Gamma Distribution**											
125	95% Approximate Gamma UCL (use when n>=50)					8.652	95% Adjusted Gamma UCL (use when n<50)					8.903
126												
127	**Lognormal GOF Test**											
128	Shapiro Wilk Test Statistic					0.958	**Shapiro Wilk Lognormal GOF Test**					
129	5% Shapiro Wilk Critical Value					0.926	Data appear Lognormal at 5% Significance Level					
130	Lilliefors Test Statistic					0.102	**Lilliefors Lognormal GOF Test**					
131	5% Lilliefors Critical Value					0.165	Data appear Lognormal at 5% Significance Level					
132	**Data appear Lognormal at 5% Significance Level**											
133												
134	**Lognormal Statistics**											
135	Minimum of Logged Data					-2.354	Mean of logged Data					0.643
136	Maximum of Logged Data					3.219	SD of logged Data					1.641
137												
138	**Assuming Lognormal Distribution**											
139	95% H-UCL					20.73	90% Chebyshev (MVUE) UCL					14.42
140	95% Chebyshev (MVUE) UCL					17.95	97.5% Chebyshev (MVUE) UCL					22.85
141	99% Chebyshev (MVUE) UCL					32.47						
142												
143	**Nonparametric Distribution Free UCL Statistics**											
144	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
145												
146	**Nonparametric Distribution Free UCLs**											
147	95% CLT UCL					7.638	95% Jackknife UCL					7.713
148	95% Standard Bootstrap UCL					7.606	95% Bootstrap-t UCL					8.069
149	95% Hall's Bootstrap UCL					7.895	95% Percentile Bootstrap UCL					7.662
150	95% BCA Bootstrap UCL					8.108						
151	90% Chebyshev(Mean, Sd) UCL					9.457	95% Chebyshev(Mean, Sd) UCL					11.28
152	97.5% Chebyshev(Mean, Sd) UCL					13.81	99% Chebyshev(Mean, Sd) UCL					18.79
153												
154	**Suggested UCL to Use**											
155	95% Adjusted Gamma UCL					8.903						
156												
157	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
158	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
159	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
160	For additional insight the user may want to consult a statistician.											
161												
162												
163	**Benzo(b)fluoranthene_0-15 - Easement**											
164												
165	**General Statistics**											
166	Total Number of Observations					29	Number of Distinct Observations					26
167							Number of Missing Observations					2
168	Minimum					0.095	Mean					7.211
169	Maximum					36	Median					2.6
170	SD					9.791	Std. Error of Mean					1.818
171	Coefficient of Variation					1.358	Skewness					1.677
172												
173	**Normal GOF Test**											
174	Shapiro Wilk Test Statistic					0.734	**Shapiro Wilk GOF Test**					
175	5% Shapiro Wilk Critical Value					0.926	Data Not Normal at 5% Significance Level					
176	Lilliefors Test Statistic					0.299	**Lilliefors GOF Test**					
177	5% Lilliefors Critical Value					0.165	Data Not Normal at 5% Significance Level					
178	**Data Not Normal at 5% Significance Level**											
179												
180	**Assuming Normal Distribution**											
181	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
182	95% Student's-t UCL					10.3	95% Adjusted-CLT UCL (Chen-1995)					10.81
183							95% Modified-t UCL (Johnson-1978)					10.4

	A	B	C	D	E	F	G	H	I	J	K	L
184												
185	**Gamma GOF Test**											
186	A-D Test Statistic					0.599	**Anderson-Darling Gamma GOF Test**					
187	5% A-D Critical Value					0.803	etected data appear Gamma Distributed at 5% Significance Lev					
188	K-S Test Statistic					0.161	**Kolmogrov-Smirnoff Gamma GOF Test**					
189	5% K-S Critical Value					0.171	etected data appear Gamma Distributed at 5% Significance Lev					
190	**Detected data appear Gamma Distributed at 5% Significance Level**											
191												
192	**Gamma Statistics**											
193	k hat (MLE)					0.577	k star (bias corrected MLE)					0.541
194	Theta hat (MLE)					12.49	Theta star (bias corrected MLE)					13.34
195	nu hat (MLE)					33.48	nu star (bias corrected)					31.35
196	MLE Mean (bias corrected)					7.211	MLE Sd (bias corrected)					9.808
197							Approximate Chi Square Value (0.05)					19.56
198	Adjusted Level of Significance					0.0407	Adjusted Chi Square Value					19
199												
200	**Assuming Gamma Distribution**											
201	95% Approximate Gamma UCL (use when n>=50)					11.56	95% Adjusted Gamma UCL (use when n<50)					11.9
202												
203	**Lognormal GOF Test**											
204	Shapiro Wilk Test Statistic					0.96	**Shapiro Wilk Lognormal GOF Test**					
205	5% Shapiro Wilk Critical Value					0.926	Data appear Lognormal at 5% Significance Level					
206	Lilliefors Test Statistic					0.108	**Lilliefors Lognormal GOF Test**					
207	5% Lilliefors Critical Value					0.165	Data appear Lognormal at 5% Significance Level					
208	**Data appear Lognormal at 5% Significance Level**											
209												
210	**Lognormal Statistics**											
211	Minimum of Logged Data					-2.354	Mean of logged Data					0.899
212	Maximum of Logged Data					3.584	SD of logged Data					1.688
213												
214	**Assuming Lognormal Distribution**											
215	95% H-UCL					30.45	90% Chebyshev (MVUE) UCL					20.33
216	95% Chebyshev (MVUE) UCL					25.38	97.5% Chebyshev (MVUE) UCL					32.39
217	99% Chebyshev (MVUE) UCL					46.15						
218												
219	**Nonparametric Distribution Free UCL Statistics**											
220	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
221												
222	**Nonparametric Distribution Free UCLs**											
223	95% CLT UCL					10.2	95% Jackknife UCL					10.3
224	95% Standard Bootstrap UCL					10.15	95% Bootstrap-t UCL					11.32
225	95% Hall's Bootstrap UCL					10.64	95% Percentile Bootstrap UCL					10.31
226	95% BCA Bootstrap UCL					11.12						
227	90% Chebyshev(Mean, Sd) UCL					12.67	95% Chebyshev(Mean, Sd) UCL					15.14
228	97.5% Chebyshev(Mean, Sd) UCL					18.57	99% Chebyshev(Mean, Sd) UCL					25.3
229												
230	**Suggested UCL to Use**											
231	95% Adjusted Gamma UCL					11.9						
232												
233	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
234	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
235	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
236	For additional insight the user may want to consult a statistician.											
237												
238												
239	**Total PCBs_0-15 _Easement**											
240												
241	**General Statistics**											
242	Total Number of Observations					48	Number of Distinct Observations					47
243							Number of Missing Observations					22
244	Minimum					0.0865	Mean					15.43

245					Maximum	127.6					Median	3.825
246					SD	26.71					Std. Error of Mean	3.856
247					Coefficient of Variation	1.731					Skewness	2.695
248												
249	**Normal GOF Test**											
250					Shapiro Wilk Test Statistic	0.601	**Shapiro Wilk GOF Test**					
251					5% Shapiro Wilk Critical Value	0.947	Data Not Normal at 5% Significance Level					
252					Lilliefors Test Statistic	0.285	**Lilliefors GOF Test**					
253					5% Lilliefors Critical Value	0.128	Data Not Normal at 5% Significance Level					
254	**Data Not Normal at 5% Significance Level**											
255												
256	**Assuming Normal Distribution**											
257	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
258					95% Student's-t UCL	21.9					95% Adjusted-CLT UCL (Chen-1995)	23.37
259											95% Modified-t UCL (Johnson-1978)	22.15
260												
261	**Gamma GOF Test**											
262					A-D Test Statistic	1.297	**Anderson-Darling Gamma GOF Test**					
263					5% A-D Critical Value	0.812	Data Not Gamma Distributed at 5% Significance Level					
264					K-S Test Statistic	0.147	**Kolmogrov-Smirnoff Gamma GOF Test**					
265					5% K-S Critical Value	0.135	Data Not Gamma Distributed at 5% Significance Level					
266	**Data Not Gamma Distributed at 5% Significance Level**											
267												
268	**Gamma Statistics**											
269					k hat (MLE)	0.516	k star (bias corrected MLE)					0.498
270					Theta hat (MLE)	29.88	Theta star (bias corrected MLE)					30.98
271					nu hat (MLE)	49.58	nu star (bias corrected)					47.81
272					MLE Mean (bias corrected)	15.43	MLE Sd (bias corrected)					21.86
273							Approximate Chi Square Value (0.05)					32.94
274					Adjusted Level of Significance	0.045	Adjusted Chi Square Value					32.56
275												
276	**Assuming Gamma Distribution**											
277	95% Approximate Gamma UCL (use when n>=50))					22.39	95% Adjusted Gamma UCL (use when n<50)					22.66
278												
279	**Lognormal GOF Test**											
280					Shapiro Wilk Test Statistic	0.979	**Shapiro Wilk Lognormal GOF Test**					
281					5% Shapiro Wilk Critical Value	0.947	Data appear Lognormal at 5% Significance Level					
282					Lilliefors Test Statistic	0.0607	**Lilliefors Lognormal GOF Test**					
283					5% Lilliefors Critical Value	0.128	Data appear Lognormal at 5% Significance Level					
284	**Data appear Lognormal at 5% Significance Level**											
285												
286	**Lognormal Statistics**											
287					Minimum of Logged Data	-2.448	Mean of logged Data					1.513
288					Maximum of Logged Data	4.849	SD of logged Data					1.71
289												
290	**Assuming Lognormal Distribution**											
291					95% H-UCL	43.57	90% Chebyshev (MVUE) UCL					36.97
292					95% Chebyshev (MVUE) UCL	45.44	97.5% Chebyshev (MVUE) UCL					57.19
293					99% Chebyshev (MVUE) UCL	80.28						
294												
295	**Nonparametric Distribution Free UCL Statistics**											
296	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
297												
298	**Nonparametric Distribution Free UCLs**											
299					95% CLT UCL	21.77	95% Jackknife UCL					21.9
300					95% Standard Bootstrap UCL	21.89	95% Bootstrap-t UCL					24.33
301					95% Hall's Bootstrap UCL	24.29	95% Percentile Bootstrap UCL					21.99
302					95% BCA Bootstrap UCL	23.93						
303					90% Chebyshev(Mean, Sd) UCL	27	95% Chebyshev(Mean, Sd) UCL					32.24
304					97.5% Chebyshev(Mean, Sd) UCL	39.51	99% Chebyshev(Mean, Sd) UCL					53.79
305												

306	**Suggested UCL to Use**											
307				95% Chebyshev (Mean, Sd) UCL		32.24						
308												
309	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
310	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
311	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
312	For additional insight the user may want to consult a statistician.											
313												
314												
315	**TEQs (NA=DL/2; EMPC=EMPC)_0-15 - Easement**											
316												
317	**General Statistics**											
318				Total Number of Observations		2			Number of Distinct Observations			2
319									Number of Missing Observations			21
320				Minimum		3.2965E-4			Mean			4.8520E-4
321				Maximum		6.4075E-4			Median			4.8520E-4
322												
323	**Warning: This data set only has 2 observations!**											
324	**Data set is too small to compute reliable and meaningful statistics and estimates!**											
325	**The data set for variable TEQs (NA=DL/2; EMPC=EMPC)_0-15 was not processed!**											
326												
327	**It is suggested to collect at least 8 to 10 observations before using these statistical methods!**											
328	**If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.**											
329												
330												
331	**Lead_0-15 - Easement**											
332												
333	**General Statistics**											
334				Total Number of Observations		42			Number of Distinct Observations			33
335									Number of Missing Observations			30
336				Minimum		35			Mean			933.1
337				Maximum		4900			Median			634
338				SD		1028			Std. Error of Mean			158.6
339				Coefficient of Variation		1.102			Skewness			2.286
340												
341	**Normal GOF Test**											
342				Shapiro Wilk Test Statistic		0.729			**Shapiro Wilk GOF Test**			
343				5% Shapiro Wilk Critical Value		0.942			Data Not Normal at 5% Significance Level			
344				Lilliefors Test Statistic		0.197			**Lilliefors GOF Test**			
345				5% Lilliefors Critical Value		0.137			Data Not Normal at 5% Significance Level			
346	**Data Not Normal at 5% Significance Level**											
347												
348	**Assuming Normal Distribution**											
349	**95% Normal UCL**								**95% UCLs (Adjusted for Skewness)**			
350				95% Student's-t UCL		1200			95% Adjusted-CLT UCL (Chen-1995)			1254
351									95% Modified-t UCL (Johnson-1978)			1209
352												
353	**Gamma GOF Test**											
354				A-D Test Statistic		0.465			**Anderson-Darling Gamma GOF Test**			
355				5% A-D Critical Value		0.78			etected data appear Gamma Distributed at 5% Significance Lev			
356				K-S Test Statistic		0.103			**Kolmogrov-Smirnoff Gamma GOF Test**			
357				5% K-S Critical Value		0.141			etected data appear Gamma Distributed at 5% Significance Lev			
358	**Detected data appear Gamma Distributed at 5% Significance Level**											
359												
360	**Gamma Statistics**											
361				k hat (MLE)		0.947			k star (bias corrected MLE)			0.895
362				Theta hat (MLE)		985.8			Theta star (bias corrected MLE)			1043
363				nu hat (MLE)		79.51			nu star (bias corrected)			75.16
364				MLE Mean (bias corrected)		933.1			MLE Sd (bias corrected)			986.4
365									Approximate Chi Square Value (0.05)			56.2
366				Adjusted Level of Significance		0.0443			Adjusted Chi Square Value			55.61

367												
368	**Assuming Gamma Distribution**											
369	95% Approximate Gamma UCL (use when n>=50)					1248	95% Adjusted Gamma UCL (use when n<50)					1261
370												
371	**Lognormal GOF Test**											
372	Shapiro Wilk Test Statistic					0.884	**Shapiro Wilk Lognormal GOF Test**					
373	5% Shapiro Wilk Critical Value					0.942	Data Not Lognormal at 5% Significance Level					
374	Lilliefors Test Statistic					0.167	**Lilliefors Lognormal GOF Test**					
375	5% Lilliefors Critical Value					0.137	Data Not Lognormal at 5% Significance Level					
376	**Data Not Lognormal at 5% Significance Level**											
377												
378	**Lognormal Statistics**											
379	Minimum of Logged Data					3.555	Mean of logged Data					6.225
380	Maximum of Logged Data					8.497	SD of logged Data					1.29
381												
382	**Assuming Lognormal Distribution**											
383	95% H-UCL					1997	90% Chebyshev (MVUE) UCL					1957
384	95% Chebyshev (MVUE) UCL					2336	97.5% Chebyshev (MVUE) UCL					2862
385	99% Chebyshev (MVUE) UCL					3894						
386												
387	**Nonparametric Distribution Free UCL Statistics**											
388	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
389												
390	**Nonparametric Distribution Free UCLs**											
391	95% CLT UCL					1194	95% Jackknife UCL					1200
392	95% Standard Bootstrap UCL					1190	95% Bootstrap-t UCL					1322
393	95% Hall's Bootstrap UCL					1316	95% Percentile Bootstrap UCL					1217
394	95% BCA Bootstrap UCL					1278						
395	90% Chebyshev(Mean, Sd) UCL					1409	95% Chebyshev(Mean, Sd) UCL					1625
396	97.5% Chebyshev(Mean, Sd) UCL					1924	99% Chebyshev(Mean, Sd) UCL					2512
397												
398	**Suggested UCL to Use**											
399	95% Adjusted Gamma UCL					1261						
400												
401	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
402	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
403	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
404	For additional insight the user may want to consult a statistician.											
405												
406												
407	**Benzo(a)anthracene_0-6 - Easement**											
408												
409	**General Statistics**											
410	Total Number of Observations					25	Number of Distinct Observations					23
411							Number of Missing Observations					2
412	Minimum					0.095	Mean					7.283
413	Maximum					37	Median					3.1
414	SD					9.794	Std. Error of Mean					1.959
415	Coefficient of Variation					1.345	Skewness					1.82
416												
417	**Normal GOF Test**											
418	Shapiro Wilk Test Statistic					0.731	**Shapiro Wilk GOF Test**					
419	5% Shapiro Wilk Critical Value					0.918	Data Not Normal at 5% Significance Level					
420	Lilliefors Test Statistic					0.275	**Lilliefors GOF Test**					
421	5% Lilliefors Critical Value					0.177	Data Not Normal at 5% Significance Level					
422	**Data Not Normal at 5% Significance Level**											
423												
424	**Assuming Normal Distribution**											
425	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
426	95% Student's-t UCL					10.63	95% Adjusted-CLT UCL (Chen-1995)					11.27
427							95% Modified-t UCL (Johnson-1978)					10.75

428												
429	**Gamma GOF Test**											
430	A-D Test Statistic					0.482	**Anderson-Darling Gamma GOF Test**					
431	5% A-D Critical Value					0.793	etected data appear Gamma Distributed at 5% Significance Lev					
432	K-S Test Statistic					0.15	**Kolmogrov-Smirnoff Gamma GOF Test**					
433	5% K-S Critical Value					0.183	etected data appear Gamma Distributed at 5% Significance Lev					
434	**Detected data appear Gamma Distributed at 5% Significance Level**											
435												
436	**Gamma Statistics**											
437	k hat (MLE)					0.65	k star (bias corrected MLE)					0.598
438	Theta hat (MLE)					11.21	Theta star (bias corrected MLE)					12.17
439	nu hat (MLE)					32.49	nu star (bias corrected)					29.92
440	MLE Mean (bias corrected)					7.283	MLE Sd (bias corrected)					9.414
441							Approximate Chi Square Value (0.05)					18.43
442	Adjusted Level of Significance					0.0395	Adjusted Chi Square Value					17.82
443												
444	**Assuming Gamma Distribution**											
445	95% Approximate Gamma UCL (use when n>=50)					11.82	95% Adjusted Gamma UCL (use when n<50)					12.23
446												
447	**Lognormal GOF Test**											
448	Shapiro Wilk Test Statistic					0.978	**Shapiro Wilk Lognormal GOF Test**					
449	5% Shapiro Wilk Critical Value					0.918	Data appear Lognormal at 5% Significance Level					
450	Lilliefors Test Statistic					0.0766	**Lilliefors Lognormal GOF Test**					
451	5% Lilliefors Critical Value					0.177	Data appear Lognormal at 5% Significance Level					
452	**Data appear Lognormal at 5% Significance Level**											
453												
454	**Lognormal Statistics**											
455	Minimum of Logged Data					-2.354	Mean of logged Data					1.046
456	Maximum of Logged Data					3.611	SD of logged Data					1.547
457												
458	**Assuming Lognormal Distribution**											
459	95% H-UCL					26.42	90% Chebyshev (MVUE) UCL					18.46
460	95% Chebyshev (MVUE) UCL					22.94	97.5% Chebyshev (MVUE) UCL					29.15
461	99% Chebyshev (MVUE) UCL					41.35						
462												
463	**Nonparametric Distribution Free UCL Statistics**											
464	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
465												
466	**Nonparametric Distribution Free UCLs**											
467	95% CLT UCL					10.5	95% Jackknife UCL					10.63
468	95% Standard Bootstrap UCL					10.49	95% Bootstrap-t UCL					12.16
469	95% Hall's Bootstrap UCL					11.59	95% Percentile Bootstrap UCL					10.71
470	95% BCA Bootstrap UCL					11.03						
471	90% Chebyshev(Mean, Sd) UCL					13.16	95% Chebyshev(Mean, Sd) UCL					15.82
472	97.5% Chebyshev(Mean, Sd) UCL					19.52	99% Chebyshev(Mean, Sd) UCL					26.77
473												
474	**Suggested UCL to Use**											
475	95% Adjusted Gamma UCL					12.23						
476												
477	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
478	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
479	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
480	For additional insight the user may want to consult a statistician.											
481												
482												
483	**Benzo(a)pyrene_0-6 - Easement**											
484												
485	**General Statistics**											
486	Total Number of Observations					25	Number of Distinct Observations					24
487							Number of Missing Observations					2
488	Minimum					0.095	Mean					6.257

489					Maximum	25					Median	2.5
490					SD	7.47					Std. Error of Mean	1.494
491					Coefficient of Variation	1.194					Skewness	1.352
492												
493	**Normal GOF Test**											
494					Shapiro Wilk Test Statistic	0.778	**Shapiro Wilk GOF Test**					
495					5% Shapiro Wilk Critical Value	0.918	Data Not Normal at 5% Significance Level					
496					Lilliefors Test Statistic	0.279	**Lilliefors GOF Test**					
497					5% Lilliefors Critical Value	0.177	Data Not Normal at 5% Significance Level					
498	**Data Not Normal at 5% Significance Level**											
499												
500	**Assuming Normal Distribution**											
501	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
502					95% Student's-t UCL	8.814					95% Adjusted-CLT UCL (Chen-1995)	9.147
503											95% Modified-t UCL (Johnson-1978)	8.881
504												
505	**Gamma GOF Test**											
506					A-D Test Statistic	0.562	**Anderson-Darling Gamma GOF Test**					
507					5% A-D Critical Value	0.787	etected data appear Gamma Distributed at 5% Significance Lev					
508					K-S Test Statistic	0.154	**Kolmogrov-Smirnoff Gamma GOF Test**					
509					5% K-S Critical Value	0.182	etected data appear Gamma Distributed at 5% Significance Lev					
510	**Detected data appear Gamma Distributed at 5% Significance Level**											
511												
512	**Gamma Statistics**											
513					k hat (MLE)	0.709					k star (bias corrected MLE)	0.65
514					Theta hat (MLE)	8.827					Theta star (bias corrected MLE)	9.619
515					nu hat (MLE)	35.44					nu star (bias corrected)	32.52
516					MLE Mean (bias corrected)	6.257					MLE Sd (bias corrected)	7.758
517											Approximate Chi Square Value (0.05)	20.49
518					Adjusted Level of Significance	0.0395					Adjusted Chi Square Value	19.84
519												
520	**Assuming Gamma Distribution**											
521	95% Approximate Gamma UCL (use when n>=50)					9.933					95% Adjusted Gamma UCL (use when n<50)	10.26
522												
523	**Lognormal GOF Test**											
524					Shapiro Wilk Test Statistic	0.96	**Shapiro Wilk Lognormal GOF Test**					
525					5% Shapiro Wilk Critical Value	0.918	Data appear Lognormal at 5% Significance Level					
526					Lilliefors Test Statistic	0.11	**Lilliefors Lognormal GOF Test**					
527					5% Lilliefors Critical Value	0.177	Data appear Lognormal at 5% Significance Level					
528	**Data appear Lognormal at 5% Significance Level**											
529												
530	**Lognormal Statistics**											
531					Minimum of Logged Data	-2.354					Mean of logged Data	0.983
532					Maximum of Logged Data	3.219					SD of logged Data	1.494
533												
534	**Assuming Lognormal Distribution**											
535					95% H-UCL	21.56					90% Chebyshev (MVUE) UCL	15.78
536					95% Chebyshev (MVUE) UCL	19.53					97.5% Chebyshev (MVUE) UCL	24.73
537					99% Chebyshev (MVUE) UCL	34.96						
538												
539	**Nonparametric Distribution Free UCL Statistics**											
540	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
541												
542	**Nonparametric Distribution Free UCLs**											
543					95% CLT UCL	8.715					95% Jackknife UCL	8.814
544					95% Standard Bootstrap UCL	8.66					95% Bootstrap-t UCL	9.427
545					95% Hall's Bootstrap UCL	9.252					95% Percentile Bootstrap UCL	8.757
546					95% BCA Bootstrap UCL	9.111						
547					90% Chebyshev(Mean, Sd) UCL	10.74					95% Chebyshev(Mean, Sd) UCL	12.77
548					97.5% Chebyshev(Mean, Sd) UCL	15.59					99% Chebyshev(Mean, Sd) UCL	21.12
549												

550	**Suggested UCL to Use**											
551					95% Adjusted Gamma UCL	10.26						
552												
553	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
554	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
555	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
556	For additional insight the user may want to consult a statistician.											
557												
558												
559	**Benzo(b)fluoranthene_0-6 - Easement**											
560												
561	**General Statistics**											
562					Total Number of Observations	25			Number of Distinct Observations	22		
563									Number of Missing Observations	2		
564					Minimum	0.095			Mean	8.324		
565					Maximum	36			Median	3.3		
566					SD	10.12			Std. Error of Mean	2.025		
567					Coefficient of Variation	1.216			Skewness	1.49		
568												
569	**Normal GOF Test**											
570					Shapiro Wilk Test Statistic	0.771			**Shapiro Wilk GOF Test**			
571					5% Shapiro Wilk Critical Value	0.918			Data Not Normal at 5% Significance Level			
572					Lilliefors Test Statistic	0.284			**Lilliefors GOF Test**			
573					5% Lilliefors Critical Value	0.177			Data Not Normal at 5% Significance Level			
574	**Data Not Normal at 5% Significance Level**											
575												
576	**Assuming Normal Distribution**											
577					**95% Normal UCL**				**95% UCLs (Adjusted for Skewness)**			
578					95% Student's-t UCL	11.79			95% Adjusted-CLT UCL (Chen-1995)	12.3		
579									95% Modified-t UCL (Johnson-1978)	11.89		
580												
581	**Gamma GOF Test**											
582					A-D Test Statistic	0.595			**Anderson-Darling Gamma GOF Test**			
583					5% A-D Critical Value	0.787			etected data appear Gamma Distributed at 5% Significance Lev			
584					K-S Test Statistic	0.182			**Kolmogrov-Smirnoff Gamma GOF Test**			
585					5% K-S Critical Value	0.182			Data Not Gamma Distributed at 5% Significance Level			
586	**Detected data follow Appr. Gamma Distribution at 5% Significance Level**											
587												
588	**Gamma Statistics**											
589					k hat (MLE)	0.718			k star (bias corrected MLE)	0.658		
590					Theta hat (MLE)	11.6			Theta star (bias corrected MLE)	12.65		
591					nu hat (MLE)	35.88			nu star (bias corrected)	32.9		
592					MLE Mean (bias corrected)	8.324			MLE Sd (bias corrected)	10.26		
593									Approximate Chi Square Value (0.05)	20.79		
594					Adjusted Level of Significance	0.0395			Adjusted Chi Square Value	20.13		
595												
596	**Assuming Gamma Distribution**											
597					95% Approximate Gamma UCL (use when n>=50)	13.17			95% Adjusted Gamma UCL (use when n<50)	13.6		
598												
599	**Lognormal GOF Test**											
600					Shapiro Wilk Test Statistic	0.963			**Shapiro Wilk Lognormal GOF Test**			
601					5% Shapiro Wilk Critical Value	0.918			Data appear Lognormal at 5% Significance Level			
602					Lilliefors Test Statistic	0.115			**Lilliefors Lognormal GOF Test**			
603					5% Lilliefors Critical Value	0.177			Data appear Lognormal at 5% Significance Level			
604	**Data appear Lognormal at 5% Significance Level**											
605												
606	**Lognormal Statistics**											
607					Minimum of Logged Data	-2.354			Mean of logged Data	1.28		
608					Maximum of Logged Data	3.584			SD of logged Data	1.48		
609												
610	**Assuming Lognormal Distribution**											

611					95% H-UCL	27.93				90% Chebyshev (MVUE) UCL		20.7
612					95% Chebyshev (MVUE) UCL	25.59				97.5% Chebyshev (MVUE) UCL		32.38
613					99% Chebyshev (MVUE) UCL	45.73						
614												
615	**Nonparametric Distribution Free UCL Statistics**											
616	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
617												
618	**Nonparametric Distribution Free UCLs**											
619					95% CLT UCL	11.65				95% Jackknife UCL		11.79
620					95% Standard Bootstrap UCL	11.49				95% Bootstrap-t UCL		12.94
621					95% Hall's Bootstrap UCL	12.18				95% Percentile Bootstrap UCL		11.81
622					95% BCA Bootstrap UCL	12.42						
623					90% Chebyshev(Mean, Sd) UCL	14.4				95% Chebyshev(Mean, Sd) UCL		17.15
624					97.5% Chebyshev(Mean, Sd) UCL	20.97				99% Chebyshev(Mean, Sd) UCL		28.47
625												
626	**Suggested UCL to Use**											
627					95% Adjusted Gamma UCL	13.6						
628												
629	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
630	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
631	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
632	For additional insight the user may want to consult a statistician.											
633												
634												
635	**Total PCBs_0-6 - Easement**											
636												
637	**General Statistics**											
638					Total Number of Observations	44				Number of Distinct Observations		43
639										Number of Missing Observations		22
640					Minimum	0.27				Mean		16.76
641					Maximum	127.6				Median		5.15
642					SD	27.53				Std. Error of Mean		4.151
643					Coefficient of Variation	1.643				Skewness		2.563
644												
645	**Normal GOF Test**											
646					Shapiro Wilk Test Statistic	0.62				**Shapiro Wilk GOF Test**		
647					5% Shapiro Wilk Critical Value	0.944				Data Not Normal at 5% Significance Level		
648					Lilliefors Test Statistic	0.288				**Lilliefors GOF Test**		
649					5% Lilliefors Critical Value	0.134				Data Not Normal at 5% Significance Level		
650	**Data Not Normal at 5% Significance Level**											
651												
652	**Assuming Normal Distribution**											
653					**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**		
654					95% Student's-t UCL	23.74				95% Adjusted-CLT UCL (Chen-1995)		25.3
655										95% Modified-t UCL (Johnson-1978)		24.01
656												
657	**Gamma GOF Test**											
658					A-D Test Statistic	1.345				**Anderson-Darling Gamma GOF Test**		
659					5% A-D Critical Value	0.806				Data Not Gamma Distributed at 5% Significance Level		
660					K-S Test Statistic	0.144				**Kolmogrov-Smirnoff Gamma GOF Test**		
661					5% K-S Critical Value	0.14				Data Not Gamma Distributed at 5% Significance Level		
662	**Data Not Gamma Distributed at 5% Significance Level**											
663												
664	**Gamma Statistics**											
665					k hat (MLE)	0.576				k star (bias corrected MLE)		0.552
666					Theta hat (MLE)	29.11				Theta star (bias corrected MLE)		30.39
667					nu hat (MLE)	50.66				nu star (bias corrected)		48.54
668					MLE Mean (bias corrected)	16.76				MLE Sd (bias corrected)		22.57
669										Approximate Chi Square Value (0.05)		33.55
670					Adjusted Level of Significance	0.0445				Adjusted Chi Square Value		33.13
671												

	A	B	C	D	E	F	G	H	I	J	K	L
672	**Assuming Gamma Distribution**											
673	95% Approximate Gamma UCL (use when n>=50))					24.25	95% Adjusted Gamma UCL (use when n<50)					24.56
674												
675	**Lognormal GOF Test**											
676	Shapiro Wilk Test Statistic					0.974	**Shapiro Wilk Lognormal GOF Test**					
677	5% Shapiro Wilk Critical Value					0.944	Data appear Lognormal at 5% Significance Level					
678	Lilliefors Test Statistic					0.0782	**Lilliefors Lognormal GOF Test**					
679	5% Lilliefors Critical Value					0.134	Data appear Lognormal at 5% Significance Level					
680	**Data appear Lognormal at 5% Significance Level**											
681												
682	**Lognormal Statistics**											
683	Minimum of Logged Data					-1.309	Mean of logged Data					1.739
684	Maximum of Logged Data					4.849	SD of logged Data					1.549
685												
686	**Assuming Lognormal Distribution**											
687	95% H-UCL					38.83	90% Chebyshev (MVUE) UCL					34.49
688	95% Chebyshev (MVUE) UCL					42.01	97.5% Chebyshev (MVUE) UCL					52.45
689	99% Chebyshev (MVUE) UCL					72.97						
690												
691	**Nonparametric Distribution Free UCL Statistics**											
692	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
693												
694	**Nonparametric Distribution Free UCLs**											
695	95% CLT UCL					23.59	95% Jackknife UCL					23.74
696	95% Standard Bootstrap UCL					23.63	95% Bootstrap-t UCL					26.66
697	95% Hall's Bootstrap UCL					26.24	95% Percentile Bootstrap UCL					23.8
698	95% BCA Bootstrap UCL					26.69						
699	90% Chebyshev(Mean, Sd) UCL					29.21	95% Chebyshev(Mean, Sd) UCL					34.86
700	97.5% Chebyshev(Mean, Sd) UCL					42.68	99% Chebyshev(Mean, Sd) UCL					58.06
701												
702	**Suggested UCL to Use**											
703	95% Chebyshev (Mean, Sd) UCL					34.86						
704												
705	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
706	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
707	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
708	For additional insight the user may want to consult a statistician.											
709												
710												
711	**TEQs (NA=DL/2; EMPC=EMPC)_0-6 - Easement**											
712												
713	**General Statistics**											
714	Total Number of Observations					2	Number of Distinct Observations					2
715							Number of Missing Observations					17
716	Minimum					3.2965E-4	Mean					4.8520E-4
717	Maximum					6.4075E-4	Median					4.8520E-4
718												
719	**Warning: This data set only has 2 observations!**											
720	**Data set is too small to compute reliable and meaningful statistics and estimates!**											
721	**The data set for variable TEQs (NA=DL/2; EMPC=EMPC)_0-6 was not processed!**											
722												
723	**It is suggested to collect at least 8 to 10 observations before using these statistical methods!**											
724	**If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.**											
725												
726												
727												
728	**Lead_0-6 - Easement**											
729												
730	**General Statistics**											
731	Total Number of Observations					38	Number of Distinct Observations					30
732							Number of Missing Observations					30

733					Minimum	41					Mean	1018
734					Maximum	4900					Median	720
735					SD	1045					Std. Error of Mean	169.5
736					Coefficient of Variation	1.026					Skewness	2.225
737												
738					**Normal GOF Test**							
739					Shapiro Wilk Test Statistic	0.761	**Shapiro Wilk GOF Test**					
740					5% Shapiro Wilk Critical Value	0.938	Data Not Normal at 5% Significance Level					
741					Lilliefors Test Statistic	0.206	**Lilliefors GOF Test**					
742					5% Lilliefors Critical Value	0.144	Data Not Normal at 5% Significance Level					
743					**Data Not Normal at 5% Significance Level**							
744												
745					**Assuming Normal Distribution**							
746					**95% Normal UCL**		**95% UCLs (Adjusted for Skewness)**					
747					95% Student's-t UCL	1304	95% Adjusted-CLT UCL (Chen-1995)	1362				
748							95% Modified-t UCL (Johnson-1978)	1314				
749												
750					**Gamma GOF Test**							
751					A-D Test Statistic	0.438	**Anderson-Darling Gamma GOF Test**					
752					5% A-D Critical Value	0.775	etected data appear Gamma Distributed at 5% Significance Lev					
753					K-S Test Statistic	0.121	**Kolmogrov-Smirnoff Gamma GOF Test**					
754					5% K-S Critical Value	0.147	etected data appear Gamma Distributed at 5% Significance Lev					
755					**Detected data appear Gamma Distributed at 5% Significance Level**							
756												
757					**Gamma Statistics**							
758					k hat (MLE)	1.129	k star (bias corrected MLE)	1.058				
759					Theta hat (MLE)	901.9	Theta star (bias corrected MLE)	962.9				
760					nu hat (MLE)	85.81	nu star (bias corrected)	80.37				
761					MLE Mean (bias corrected)	1018	MLE Sd (bias corrected)	990.2				
762							Approximate Chi Square Value (0.05)	60.71				
763					Adjusted Level of Significance	0.0434	Adjusted Chi Square Value	60.01				
764												
765					**Assuming Gamma Distribution**							
766					95% Approximate Gamma UCL (use when n>=50)	1348	95% Adjusted Gamma UCL (use when n<50)	1364				
767												
768					**Lognormal GOF Test**							
769					Shapiro Wilk Test Statistic	0.924	**Shapiro Wilk Lognormal GOF Test**					
770					5% Shapiro Wilk Critical Value	0.938	Data Not Lognormal at 5% Significance Level					
771					Lilliefors Test Statistic	0.172	**Lilliefors Lognormal GOF Test**					
772					5% Lilliefors Critical Value	0.144	Data Not Lognormal at 5% Significance Level					
773					**Data Not Lognormal at 5% Significance Level**							
774												
775					**Lognormal Statistics**							
776					Minimum of Logged Data	3.714	Mean of logged Data	6.422				
777					Maximum of Logged Data	8.497	SD of logged Data	1.155				
778												
779					**Assuming Lognormal Distribution**							
780					95% H-UCL	1955	90% Chebyshev (MVUE) UCL	1954				
781					95% Chebyshev (MVUE) UCL	2311	97.5% Chebyshev (MVUE) UCL	2807				
782					99% Chebyshev (MVUE) UCL	3781						
783												
784					**Nonparametric Distribution Free UCL Statistics**							
785					**Data appear to follow a Discernible Distribution at 5% Significance Level**							
786												
787					**Nonparametric Distribution Free UCLs**							
788					95% CLT UCL	1297	95% Jackknife UCL	1304				
789					95% Standard Bootstrap UCL	1296	95% Bootstrap-t UCL	1425				
790					95% Hall's Bootstrap UCL	1514	95% Percentile Bootstrap UCL	1317				
791					95% BCA Bootstrap UCL	1354						
792					90% Chebyshev(Mean, Sd) UCL	1527	95% Chebyshev(Mean, Sd) UCL	1757				
793					97.5% Chebyshev(Mean, Sd) UCL	2077	99% Chebyshev(Mean, Sd) UCL	2705				

	A	B	C	D	E	F	G	H	I	J	K	L
794												
795	**Suggested UCL to Use**											
796	95% Adjusted Gamma UCL					1364						
797												
798	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
799	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
800	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
801	For additional insight the user may want to consult a statistician.											
802												

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	9/3/2014 12:04:27 PM
From File	ProUCL_Import.xls
Full Precision	OFF
Confidence Coefficient	95%
mber of Bootstrap Operations	2000

Benzo(a)anthracene_0-15 - Lots

General Statistics

Total Number of Observations	162	Number of Distinct Observations	109
		Number of Missing Observations	58
Minimum	0.095	Mean	9.816
Maximum	220	Median	2.7
SD	24.35	Std. Error of Mean	1.913
Coefficient of Variation	2.48	Skewness	5.718

Normal GOF Test

Shapiro Wilk Test Statistic	0.413	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	0	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.345	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0696	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	12.98	95% Adjusted-CLT UCL (Chen-1995)	13.88
		95% Modified-t UCL (Johnson-1978)	13.12

Gamma GOF Test

A-D Test Statistic	6.005	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.819	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.164	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.0776	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.51	k star (bias corrected MLE)	0.504
Theta hat (MLE)	19.26	Theta star (bias corrected MLE)	19.46
nu hat (MLE)	165.1	nu star (bias corrected)	163.4
MLE Mean (bias corrected)	9.816	MLE Sd (bias corrected)	13.82
		Approximate Chi Square Value (0.05)	134.8
Adjusted Level of Significance	0.0485	Adjusted Chi Square Value	134.6

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	11.89	95% Adjusted Gamma UCL (use when n<50)	11.91

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.978	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk P Value	0.295	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0443	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.0696	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-2.354	Mean of logged Data	1.041
Maximum of Logged Data	5.394	SD of logged Data	1.564

62	**Assuming Lognormal Distribution**											
63					95% H-UCL	13.44			90% Chebyshev (MVUE) UCL			14.5
64					95% Chebyshev (MVUE) UCL	16.78			97.5% Chebyshev (MVUE) UCL			19.94
65					99% Chebyshev (MVUE) UCL	26.15						
66												
67	**Nonparametric Distribution Free UCL Statistics**											
68	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
69												
70	**Nonparametric Distribution Free UCLs**											
71					95% CLT UCL	12.96			95% Jackknife UCL			12.98
72					95% Standard Bootstrap UCL	12.98			95% Bootstrap-t UCL			14.86
73					95% Hall's Bootstrap UCL	15.23			95% Percentile Bootstrap UCL			13.04
74					95% BCA Bootstrap UCL	14.24						
75					90% Chebyshev(Mean, Sd) UCL	15.55			95% Chebyshev(Mean, Sd) UCL			18.15
76					97.5% Chebyshev(Mean, Sd) UCL	21.76			99% Chebyshev(Mean, Sd) UCL			28.85
77												
78	**Suggested UCL to Use**											
79					95% H-UCL	13.44						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
83	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
84	For additional insight the user may want to consult a statistician.											
85												
86	**ProUCL computes and outputs H-statistic based UCLs for historical reasons only.**											
87	**H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.**											
88	**It is therefore recommended to avoid the use of H-statistic based 95% UCLs.**											
89	**se of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.**											
90												
91												
92	**Benzo(a)pyrene_0-15 Lots**											
93												
94	**General Statistics**											
95					Total Number of Observations	162			Number of Distinct Observations			107
96									Number of Missing Observations			58
97					Minimum	0.095			Mean			8.446
98					Maximum	210			Median			2.55
99					SD	21.24			Std. Error of Mean			1.669
100					Coefficient of Variation	2.515			Skewness			6.548
101												
102	**Normal GOF Test**											
103					Shapiro Wilk Test Statistic	0.397			**Shapiro Wilk GOF Test**			
104					5% Shapiro Wilk P Value	0			Data Not Normal at 5% Significance Level			
105					Lilliefors Test Statistic	0.347			**Lilliefors GOF Test**			
106					5% Lilliefors Critical Value	0.0696			Data Not Normal at 5% Significance Level			
107	**Data Not Normal at 5% Significance Level**											
108												
109	**Assuming Normal Distribution**											
110					**95% Normal UCL**				**95% UCLs (Adjusted for Skewness)**			
111					95% Student's-t UCL	11.21			95% Adjusted-CLT UCL (Chen-1995)			12.11
112									95% Modified-t UCL (Johnson-1978)			11.35
113												
114	**Gamma GOF Test**											
115					A-D Test Statistic	5.752			**Anderson-Darling Gamma GOF Test**			
116					5% A-D Critical Value	0.816			Data Not Gamma Distributed at 5% Significance Level			
117					K-S Test Statistic	0.161			**Kolmogrov-Smirnoff Gamma GOF Test**			
118					5% K-S Critical Value	0.0775			Data Not Gamma Distributed at 5% Significance Level			
119	**Data Not Gamma Distributed at 5% Significance Level**											
120												
121	**Gamma Statistics**											
122					k hat (MLE)	0.543			k star (bias corrected MLE)			0.537

123				Theta hat (MLE)		15.57			Theta star (bias corrected MLE)			15.74
124				nu hat (MLE)		175.8			nu star (bias corrected)			173.9
125				MLE Mean (bias corrected)		8.446			MLE Sd (bias corrected)			11.53
126									Approximate Chi Square Value (0.05)			144.4
127				Adjusted Level of Significance		0.0485			Adjusted Chi Square Value			144.1
128												
129						**Assuming Gamma Distribution**							
130			95% Approximate Gamma UCL (use when n>=50))			10.17			95% Adjusted Gamma UCL (use when n<50)			10.19
131												
132						**Lognormal GOF Test**							
133				Shapiro Wilk Test Statistic		0.982			**Shapiro Wilk Lognormal GOF Test**			
134				5% Shapiro Wilk P Value		0.489			Data appear Lognormal at 5% Significance Level			
135				Lilliefors Test Statistic		0.0436			**Lilliefors Lognormal GOF Test**			
136				5% Lilliefors Critical Value		0.0696			Data appear Lognormal at 5% Significance Level			
137						**Data appear Lognormal at 5% Significance Level**							
138												
139						**Lognormal Statistics**							
140				Minimum of Logged Data		-2.354			Mean of logged Data			0.978
141				Maximum of Logged Data		5.347			SD of logged Data			1.493
142												
143						**Assuming Lognormal Distribution**							
144				95% H-UCL		11.05			90% Chebyshev (MVUE) UCL			11.95
145				95% Chebyshev (MVUE) UCL		13.75			97.5% Chebyshev (MVUE) UCL			16.24
146				99% Chebyshev (MVUE) UCL		21.13						
147												
148						**Nonparametric Distribution Free UCL Statistics**							
149						**Data appear to follow a Discernible Distribution at 5% Significance Level**							
150												
151						**Nonparametric Distribution Free UCLs**							
152				95% CLT UCL		11.19			95% Jackknife UCL			11.21
153				95% Standard Bootstrap UCL		11.24			95% Bootstrap-t UCL			12.67
154				95% Hall's Bootstrap UCL		16.46			95% Percentile Bootstrap UCL			11.4
155				95% BCA Bootstrap UCL		13						
156				90% Chebyshev(Mean, Sd) UCL		13.45			95% Chebyshev(Mean, Sd) UCL			15.72
157				97.5% Chebyshev(Mean, Sd) UCL		18.87			99% Chebyshev(Mean, Sd) UCL			25.05
158												
159						**Suggested UCL to Use**							
160				95% H-UCL		11.05						
161												
162	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
163	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
164	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
165	For additional insight the user may want to consult a statistician.											
166												
167	**ProUCL computes and outputs H-statistic based UCLs for historical reasons only.**											
168	**H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.**											
169	**It is therefore recommended to avoid the use of H-statistic based 95% UCLs.**											
170	**se of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.**											
171												
172												
173	**Benzo(b)fluoranthene_0-15 - Lots**											
174												
175						**General Statistics**							
176				Total Number of Observations		162			Number of Distinct Observations			108
177									Number of Missing Observations			58
178				Minimum		0.095			Mean			10.39
179				Maximum		190			Median			3.35
180				SD		22.87			Std. Error of Mean			1.797
181				Coefficient of Variation		2.2			Skewness			5.058
182												
183						**Normal GOF Test**							

	A	B	C	D	E	F	G	H	I	J	K	L
184					Shapiro Wilk Test Statistic	0.454	**Shapiro Wilk GOF Test**					
185					5% Shapiro Wilk P Value	0	Data Not Normal at 5% Significance Level					
186					Lilliefors Test Statistic	0.326	**Lilliefors GOF Test**					
187					5% Lilliefors Critical Value	0.0696	Data Not Normal at 5% Significance Level					
188	**Data Not Normal at 5% Significance Level**											
189												
190	**Assuming Normal Distribution**											
191	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
192					95% Student's-t UCL	13.37				95% Adjusted-CLT UCL (Chen-1995)		14.11
193										95% Modified-t UCL (Johnson-1978)		13.49
194												
195	**Gamma GOF Test**											
196					A-D Test Statistic	4.818	**Anderson-Darling Gamma GOF Test**					
197					5% A-D Critical Value	0.814	Data Not Gamma Distributed at 5% Significance Level					
198					K-S Test Statistic	0.149	**Kolmogrov-Smirnoff Gamma GOF Test**					
199					5% K-S Critical Value	0.0774	Data Not Gamma Distributed at 5% Significance Level					
200	**Data Not Gamma Distributed at 5% Significance Level**											
201												
202	**Gamma Statistics**											
203					k hat (MLE)	0.559				k star (bias corrected MLE)		0.553
204					Theta hat (MLE)	18.58				Theta star (bias corrected MLE)		18.79
205					nu hat (MLE)	181.3				nu star (bias corrected)		179.3
206					MLE Mean (bias corrected)	10.39				MLE Sd (bias corrected)		13.97
207										Approximate Chi Square Value (0.05)		149.3
208					Adjusted Level of Significance	0.0485				Adjusted Chi Square Value		149
209												
210	**Assuming Gamma Distribution**											
211	95% Approximate Gamma UCL (use when n>=50))					12.48				95% Adjusted Gamma UCL (use when n<50)		12.5
212												
213	**Lognormal GOF Test**											
214					Shapiro Wilk Test Statistic	0.979	**Shapiro Wilk Lognormal GOF Test**					
215					5% Shapiro Wilk P Value	0.335	Data appear Lognormal at 5% Significance Level					
216					Lilliefors Test Statistic	0.0482	**Lilliefors Lognormal GOF Test**					
217					5% Lilliefors Critical Value	0.0696	Data appear Lognormal at 5% Significance Level					
218	**Data appear Lognormal at 5% Significance Level**											
219												
220	**Lognormal Statistics**											
221					Minimum of Logged Data	-2.354				Mean of logged Data		1.225
222					Maximum of Logged Data	5.247				SD of logged Data		1.516
223												
224	**Assuming Lognormal Distribution**											
225					95% H-UCL	14.76				90% Chebyshev (MVUE) UCL		15.96
226					95% Chebyshev (MVUE) UCL	18.39				97.5% Chebyshev (MVUE) UCL		21.77
227					99% Chebyshev (MVUE) UCL	28.4						
228												
229	**Nonparametric Distribution Free UCL Statistics**											
230	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
231												
232	**Nonparametric Distribution Free UCLs**											
233					95% CLT UCL	13.35				95% Jackknife UCL		13.37
234					95% Standard Bootstrap UCL	13.4				95% Bootstrap-t UCL		14.65
235					95% Hall's Bootstrap UCL	14.86				95% Percentile Bootstrap UCL		13.54
236					95% BCA Bootstrap UCL	14.54						
237					90% Chebyshev(Mean, Sd) UCL	15.78				95% Chebyshev(Mean, Sd) UCL		18.23
238					97.5% Chebyshev(Mean, Sd) UCL	21.61				99% Chebyshev(Mean, Sd) UCL		28.27
239												
240	**Suggested UCL to Use**											
241					95% H-UCL	14.76						
242												
243	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
244	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											

245	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
246	For additional insight the user may want to consult a statistician.											
247												
248	**ProUCL computes and outputs H-statistic based UCLs for historical reasons only.**											
249	**H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.**											
250	**It is therefore recommended to avoid the use of H-statistic based 95% UCLs.**											
251	**se of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.**											
252												
253												
254	**Dibenz(a,h)anthracene_0-15 - Lots**											
255												
256	**General Statistics**											
257						Total Number of Observations	160			Number of Distinct Observations	108		
258										Number of Missing Observations	60		
259						Minimum	0.044			Mean	1.087		
260						Maximum	15			Median	0.45		
261						SD	2.163			Std. Error of Mean	0.171		
262						Coefficient of Variation	1.99			Skewness	4.807		
263													
264	**Normal GOF Test**											
265						Shapiro Wilk Test Statistic	0.45			**Shapiro Wilk GOF Test**			
266						5% Shapiro Wilk P Value	0			Data Not Normal at 5% Significance Level			
267						Lilliefors Test Statistic	0.315			**Lilliefors GOF Test**			
268						5% Lilliefors Critical Value	0.07			Data Not Normal at 5% Significance Level			
269	**Data Not Normal at 5% Significance Level**												
270													
271	**Assuming Normal Distribution**												
272						**95% Normal UCL**				**95% UCLs (Adjusted for Skewness)**			
273						95% Student's-t UCL	1.37			95% Adjusted-CLT UCL (Chen-1995)	1.438		
274										95% Modified-t UCL (Johnson-1978)	1.381		
275													
276	**Gamma GOF Test**												
277						A-D Test Statistic	7.235			**Anderson-Darling Gamma GOF Test**			
278						5% A-D Critical Value	0.796			Data Not Gamma Distributed at 5% Significance Level			
279						K-S Test Statistic	0.156			**Kolmogrov-Smirnoff Gamma GOF Test**			
280						5% K-S Critical Value	0.0769			Data Not Gamma Distributed at 5% Significance Level			
281	**Data Not Gamma Distributed at 5% Significance Level**												
282													
283	**Gamma Statistics**												
284						k hat (MLE)	0.754			k star (bias corrected MLE)	0.744		
285						Theta hat (MLE)	1.442			Theta star (bias corrected MLE)	1.461		
286						nu hat (MLE)	241.3			nu star (bias corrected)	238.1		
287						MLE Mean (bias corrected)	1.087			MLE Sd (bias corrected)	1.26		
288										Approximate Chi Square Value (0.05)	203.4		
289						Adjusted Level of Significance	0.0485			Adjusted Chi Square Value	203.1		
290													
291	**Assuming Gamma Distribution**												
292						95% Approximate Gamma UCL (use when n>=50))	1.273			95% Adjusted Gamma UCL (use when n<50)	1.275		
293													
294	**Lognormal GOF Test**												
295						Shapiro Wilk Test Statistic	0.957			**Shapiro Wilk Lognormal GOF Test**			
296						5% Shapiro Wilk P Value	6.0830E-4			Data Not Lognormal at 5% Significance Level			
297						Lilliefors Test Statistic	0.0723			**Lilliefors Lognormal GOF Test**			
298						5% Lilliefors Critical Value	0.07			Data Not Lognormal at 5% Significance Level			
299	**Data Not Lognormal at 5% Significance Level**												
300													
301	**Lognormal Statistics**												
302						Minimum of Logged Data	-3.124			Mean of logged Data	-0.71		
303						Maximum of Logged Data	2.708			SD of logged Data	1.145		
304													
305	**Assuming Lognormal Distribution**												

306					95% H-UCL	1.173			90% Chebyshev (MVUE) UCL			1.264
307					95% Chebyshev (MVUE) UCL	1.411			97.5% Chebyshev (MVUE) UCL			1.614
308					99% Chebyshev (MVUE) UCL	2.013						
309												
310	**Nonparametric Distribution Free UCL Statistics**											
311	**Data do not follow a Discernible Distribution (0.05)**											
312												
313	**Nonparametric Distribution Free UCLs**											
314					95% CLT UCL	1.368			95% Jackknife UCL			1.37
315					95% Standard Bootstrap UCL	1.375			95% Bootstrap-t UCL			1.506
316					95% Hall's Bootstrap UCL	1.458			95% Percentile Bootstrap UCL			1.406
317					95% BCA Bootstrap UCL	1.45						
318					90% Chebyshev(Mean, Sd) UCL	1.6			95% Chebyshev(Mean, Sd) UCL			1.833
319					97.5% Chebyshev(Mean, Sd) UCL	2.155			99% Chebyshev(Mean, Sd) UCL			2.789
320												
321	**Suggested UCL to Use**											
322					95% Chebyshev (Mean, Sd) UCL	1.833						
323												
324	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
325	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
326	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
327	For additional insight the user may want to consult a statistician.											
328												
329												
330	**Indeno(1,2,3-cd)pyrene_0-15 - Lots**											
331												
332	**General Statistics**											
333					Total Number of Observations	161			Number of Distinct Observations			108
334									Number of Missing Observations			59
335					Minimum	0.095			Mean			4.861
336					Maximum	140			Median			1.6
337					SD	12.96			Std. Error of Mean			1.022
338					Coefficient of Variation	2.666			Skewness			7.861
339												
340	**Normal GOF Test**											
341					Shapiro Wilk Test Statistic	0.359			**Shapiro Wilk GOF Test**			
342					5% Shapiro Wilk P Value	0			Data Not Normal at 5% Significance Level			
343					Lilliefors Test Statistic	0.357			**Lilliefors GOF Test**			
344					5% Lilliefors Critical Value	0.0698			Data Not Normal at 5% Significance Level			
345	**Data Not Normal at 5% Significance Level**											
346												
347	**Assuming Normal Distribution**											
348					**95% Normal UCL**				**95% UCLs (Adjusted for Skewness)**			
349					95% Student's-t UCL	6.551			95% Adjusted-CLT UCL (Chen-1995)			7.218
350									95% Modified-t UCL (Johnson-1978)			6.657
351												
352	**Gamma GOF Test**											
353					A-D Test Statistic	5.809			**Anderson-Darling Gamma GOF Test**			
354					5% A-D Critical Value	0.812			Data Not Gamma Distributed at 5% Significance Level			
355					K-S Test Statistic	0.148			**Kolmogrov-Smirnoff Gamma GOF Test**			
356					5% K-S Critical Value	0.0775			Data Not Gamma Distributed at 5% Significance Level			
357	**Data Not Gamma Distributed at 5% Significance Level**											
358												
359	**Gamma Statistics**											
360					k hat (MLE)	0.582			k star (bias corrected MLE)			0.575
361					Theta hat (MLE)	8.353			Theta star (bias corrected MLE)			8.45
362					nu hat (MLE)	187.4			nu star (bias corrected)			185.2
363					MLE Mean (bias corrected)	4.861			MLE Sd (bias corrected)			6.409
364									Approximate Chi Square Value (0.05)			154.8
365					Adjusted Level of Significance	0.0485			Adjusted Chi Square Value			154.5
366												

367	**Assuming Gamma Distribution**											
368	95% Approximate Gamma UCL (use when n>=50))					5.819	95% Adjusted Gamma UCL (use when n<50)					5.828
369												
370	**Lognormal GOF Test**											
371	Shapiro Wilk Test Statistic					0.98	**Shapiro Wilk Lognormal GOF Test**					
372	5% Shapiro Wilk P Value					0.404	Data appear Lognormal at 5% Significance Level					
373	Lilliefors Test Statistic					0.034	**Lilliefors Lognormal GOF Test**					
374	5% Lilliefors Critical Value					0.0698	Data appear Lognormal at 5% Significance Level					
375	**Data appear Lognormal at 5% Significance Level**											
376												
377	**Lognormal Statistics**											
378	Minimum of Logged Data					-2.354	Mean of logged Data					0.515
379	Maximum of Logged Data					4.942	SD of logged Data					1.395
380												
381	**Assuming Lognormal Distribution**											
382	95% H-UCL					5.847	90% Chebyshev (MVUE) UCL					6.344
383	95% Chebyshev (MVUE) UCL					7.236	97.5% Chebyshev (MVUE) UCL					8.475
384	99% Chebyshev (MVUE) UCL					10.91						
385												
386	**Nonparametric Distribution Free UCL Statistics**											
387	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
388												
389	**Nonparametric Distribution Free UCLs**											
390	95% CLT UCL					6.542	95% Jackknife UCL					6.551
391	95% Standard Bootstrap UCL					6.529	95% Bootstrap-t UCL					8.15
392	95% Hall's Bootstrap UCL					13.22	95% Percentile Bootstrap UCL					6.763
393	95% BCA Bootstrap UCL					7.599						
394	90% Chebyshev(Mean, Sd) UCL					7.926	95% Chebyshev(Mean, Sd) UCL					9.314
395	97.5% Chebyshev(Mean, Sd) UCL					11.24	99% Chebyshev(Mean, Sd) UCL					15.03
396												
397	**Suggested UCL to Use**											
398	95% H-UCL					5.847						
399												
400	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
401	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
402	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
403	For additional insight the user may want to consult a statistician.											
404												
405	**ProUCL computes and outputs H-statistic based UCLs for historical reasons only.**											
406	**H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.**											
407	**It is therefore recommended to avoid the use of H-statistic based 95% UCLs.**											
408	**se of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.**											
409												
410												
411	**Total PCBs_0-15 - Lots**											
412												
413	**General Statistics**											
414	Total Number of Observations					205	Number of Distinct Observations					199
415							Number of Missing Observations					15
416	Minimum					0.0293	Mean					27.32
417	Maximum					736.4	Median					10.11
418	SD					75.45	Std. Error of Mean					5.27
419	Coefficient of Variation					2.762	Skewness					7.137
420												
421	**Normal GOF Test**											
422	Shapiro Wilk Test Statistic					0.338	**Shapiro Wilk GOF Test**					
423	5% Shapiro Wilk P Value					0	Data Not Normal at 5% Significance Level					
424	Lilliefors Test Statistic					0.359	**Lilliefors GOF Test**					
425	5% Lilliefors Critical Value					0.0619	Data Not Normal at 5% Significance Level					
426	**Data Not Normal at 5% Significance Level**											
427												

	A	B	C	D	E	F	G	H	I	J	K	L
428	**Assuming Normal Distribution**											
429	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
430	95% Student's-t UCL					36.03	95% Adjusted-CLT UCL (Chen-1995)					38.8
431							95% Modified-t UCL (Johnson-1978)					36.47
432												
433	**Gamma GOF Test**											
434	A-D Test Statistic					3.385	**Anderson-Darling Gamma GOF Test**					
435	5% A-D Critical Value					0.826	Data Not Gamma Distributed at 5% Significance Level					
436	K-S Test Statistic					0.107	**Kolmogrov-Smirnoff Gamma GOF Test**					
437	5% K-S Critical Value					0.0669	Data Not Gamma Distributed at 5% Significance Level					
438	**Data Not Gamma Distributed at 5% Significance Level**											
439												
440	**Gamma Statistics**											
441	k hat (MLE)					0.477	k star (bias corrected MLE)					0.474
442	Theta hat (MLE)					57.22	Theta star (bias corrected MLE)					57.68
443	nu hat (MLE)					195.8	nu star (bias corrected)					194.2
444	MLE Mean (bias corrected)					27.32	MLE Sd (bias corrected)					39.7
445							Approximate Chi Square Value (0.05)					163
446	Adjusted Level of Significance					0.0488	Adjusted Chi Square Value					162.8
447												
448	**Assuming Gamma Distribution**											
449	95% Approximate Gamma UCL (use when n>=50))					32.56	95% Adjusted Gamma UCL (use when n<50)					32.6
450												
451	**Lognormal GOF Test**											
452	Shapiro Wilk Test Statistic					0.958	**Shapiro Wilk Lognormal GOF Test**					
453	5% Shapiro Wilk P Value					7.4148E-5	Data Not Lognormal at 5% Significance Level					
454	Lilliefors Test Statistic					0.0908	**Lilliefors Lognormal GOF Test**					
455	5% Lilliefors Critical Value					0.0619	Data Not Lognormal at 5% Significance Level					
456	**Data Not Lognormal at 5% Significance Level**											
457												
458	**Lognormal Statistics**											
459	Minimum of Logged Data					-3.53	Mean of logged Data					1.968
460	Maximum of Logged Data					6.602	SD of logged Data					1.838
461												
462	**Assuming Lognormal Distribution**											
463	95% H-UCL					56.73	90% Chebyshev (MVUE) UCL					60.86
464	95% Chebyshev (MVUE) UCL					71.27	97.5% Chebyshev (MVUE) UCL					85.71
465	99% Chebyshev (MVUE) UCL					114.1						
466												
467	**Nonparametric Distribution Free UCL Statistics**											
468	**Data do not follow a Discernible Distribution (0.05)**											
469												
470	**Nonparametric Distribution Free UCLs**											
471	95% CLT UCL					35.99	95% Jackknife UCL					36.03
472	95% Standard Bootstrap UCL					35.88	95% Bootstrap-t UCL					42.64
473	95% Hall's Bootstrap UCL					53.32	95% Percentile Bootstrap UCL					36.43
474	95% BCA Bootstrap UCL					39.36						
475	90% Chebyshev(Mean, Sd) UCL					43.13	95% Chebyshev(Mean, Sd) UCL					50.29
476	97.5% Chebyshev(Mean, Sd) UCL					60.23	99% Chebyshev(Mean, Sd) UCL					79.76
477												
478	**Suggested UCL to Use**											
479	95% Chebyshev (Mean, Sd) UCL					50.29						
480												
481	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
482	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
483	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
484	For additional insight the user may want to consult a statistician.											
485												
486												
487	**TEQs (ND=DL/2; EMPC=EMPC)_0-15 - Lots**											
488												

	A	B	C	D	E	F	G	H	I	J	K	L
489	**General Statistics**											
490					Total Number of Observations	20				Number of Distinct Observations		20
491										Number of Missing Observations		161
492					Minimum	6.4261E-5				Mean		3.8076E-4
493					Maximum	0.00112				Median		3.6571E-4
494					SD	2.5769E-4				Std. Error of Mean		5.7621E-5
495					Coefficient of Variation	0.677				Skewness		1.259
496												
497	**Normal GOF Test**											
498					Shapiro Wilk Test Statistic	0.908	**Shapiro Wilk GOF Test**					
499					5% Shapiro Wilk Critical Value	0.905	Data appear Normal at 5% Significance Level					
500					Lilliefors Test Statistic	0.145	**Lilliefors GOF Test**					
501					5% Lilliefors Critical Value	0.198	Data appear Normal at 5% Significance Level					
502	**Data appear Normal at 5% Significance Level**											
503												
504	**Assuming Normal Distribution**											
505	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
506					95% Student's-t UCL	4.8040E-4				95% Adjusted-CLT UCL (Chen-1995)		4.9288E-4
507										95% Modified-t UCL (Johnson-1978)		4.8310E-4
508												
509	**Gamma GOF Test**											
510					A-D Test Statistic	0.2	**Anderson-Darling Gamma GOF Test**					
511					5% A-D Critical Value	0.751	etected data appear Gamma Distributed at 5% Significance Lev					
512					K-S Test Statistic	0.108	**Kolmogrov-Smirnoff Gamma GOF Test**					
513					5% K-S Critical Value	0.196	etected data appear Gamma Distributed at 5% Significance Lev					
514	**Detected data appear Gamma Distributed at 5% Significance Level**											
515												
516	**Gamma Statistics**											
517					k hat (MLE)	2.242				k star (bias corrected MLE)		1.939
518					Theta hat (MLE)	1.6982E-4				Theta star (bias corrected MLE)		1.9635E-4
519					nu hat (MLE)	89.69				nu star (bias corrected)		77.57
520					MLE Mean (bias corrected)	3.8076E-4				MLE Sd (bias corrected)		2.7343E-4
521										Approximate Chi Square Value (0.05)		58.28
522					Adjusted Level of Significance	0.038				Adjusted Chi Square Value		56.96
523												
524	**Assuming Gamma Distribution**											
525					95% Approximate Gamma UCL (use when n>=50))	5.0679E-4				95% Adjusted Gamma UCL (use when n<50)		5.1854E-4
526												
527	**Lognormal GOF Test**											
528					Shapiro Wilk Test Statistic	0.961	**Shapiro Wilk Lognormal GOF Test**					
529					5% Shapiro Wilk Critical Value	0.905	Data appear Lognormal at 5% Significance Level					
530					Lilliefors Test Statistic	0.15	**Lilliefors Lognormal GOF Test**					
531					5% Lilliefors Critical Value	0.198	Data appear Lognormal at 5% Significance Level					
532	**Data appear Lognormal at 5% Significance Level**											
533												
534	**Lognormal Statistics**											
535					Minimum of Logged Data	-9.653				Mean of logged Data		-8.113
536					Maximum of Logged Data	-6.792				SD of logged Data		0.759
537												
538	**Assuming Lognormal Distribution**											
539					95% H-UCL	5.9714E-4				90% Chebyshev (MVUE) UCL		6.0775E-4
540					95% Chebyshev (MVUE) UCL	7.0520E-4				97.5% Chebyshev (MVUE) UCL		8.4046E-4
541					99% Chebyshev (MVUE) UCL	0.00111						
542												
543	**Nonparametric Distribution Free UCL Statistics**											
544	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
545												
546	**Nonparametric Distribution Free UCLs**											
547					95% CLT UCL	4.7554E-4				95% Jackknife UCL		4.8040E-4
548					95% Standard Bootstrap UCL	4.7437E-4				95% Bootstrap-t UCL		5.0009E-4
549					95% Hall's Bootstrap UCL	5.3046E-4				95% Percentile Bootstrap UCL		4.7870E-4

	A	B	C	D	E	F	G	H	I	J	K	L
550					95% BCA Bootstrap UCL	4.9459E-4						
551					90% Chebyshev(Mean, Sd) UCL	5.5363E-4				95% Chebyshev(Mean, Sd) UCL		6.3193E-4
552					97.5% Chebyshev(Mean, Sd) UCL	7.4061E-4				99% Chebyshev(Mean, Sd) UCL		9.5409E-4
553												
554					**Suggested UCL to Use**							
555					95% Student's-t UCL	4.8040E-4						
556												
557	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
558	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
559	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
560	For additional insight the user may want to consult a statistician.											
561												
562												
563	**Antimony_0-15 - Lots**											
564												
565					**General Statistics**							
566					Total Number of Observations	141				Number of Distinct Observations		53
567										Number of Missing Observations		76
568					Minimum	1.3				Mean		5.658
569					Maximum	310				Median		1.7
570					SD	26.72				Std. Error of Mean		2.251
571					Coefficient of Variation	4.724				Skewness		10.81
572												
573					**Normal GOF Test**							
574					Shapiro Wilk Test Statistic	0.163				**Shapiro Wilk GOF Test**		
575					5% Shapiro Wilk P Value	0				Data Not Normal at 5% Significance Level		
576					Lilliefors Test Statistic	0.435				**Lilliefors GOF Test**		
577					5% Lilliefors Critical Value	0.0746				Data Not Normal at 5% Significance Level		
578					**Data Not Normal at 5% Significance Level**							
579												
580					**Assuming Normal Distribution**							
581					**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**		
582					95% Student's-t UCL	9.384				95% Adjusted-CLT UCL (Chen-1995)		11.55
583										95% Modified-t UCL (Johnson-1978)		9.726
584												
585					**Gamma GOF Test**							
586					A-D Test Statistic	7.092E+28				**Anderson-Darling Gamma GOF Test**		
587					5% A-D Critical Value	0.801				Data Not Gamma Distributed at 5% Significance Level		
588					K-S Test Statistic	0.326				**Kolmogrov-Smirnoff Gamma GOF Test**		
589					5% K-S Critical Value	0.0823				Data Not Gamma Distributed at 5% Significance Level		
590					**Data Not Gamma Distributed at 5% Significance Level**							
591												
592					**Gamma Statistics**							
593					k hat (MLE)	0.688				k star (bias corrected MLE)		0.678
594					Theta hat (MLE)	8.225				Theta star (bias corrected MLE)		8.345
595					nu hat (MLE)	194				nu star (bias corrected)		191.2
596					MLE Mean (bias corrected)	5.658				MLE Sd (bias corrected)		6.871
597										Approximate Chi Square Value (0.05)		160.2
598					Adjusted Level of Significance	0.0483				Adjusted Chi Square Value		159.9
599												
600					**Assuming Gamma Distribution**							
601					95% Approximate Gamma UCL (use when n>=50))	6.752				95% Adjusted Gamma UCL (use when n<50)		6.764
602												
603					**Lognormal GOF Test**							
604					Shapiro Wilk Test Statistic	0.665				**Shapiro Wilk Lognormal GOF Test**		
605					5% Shapiro Wilk P Value	0				Data Not Lognormal at 5% Significance Level		
606					Lilliefors Test Statistic	0.271				**Lilliefors Lognormal GOF Test**		
607					5% Lilliefors Critical Value	0.0746				Data Not Lognormal at 5% Significance Level		
608					**Data Not Lognormal at 5% Significance Level**							
609												
610					**Lognormal Statistics**							

611	Minimum of Logged Data				0.262	Mean of logged Data						0.852
612	Maximum of Logged Data				5.737	SD of logged Data						0.809
613												
614	**Assuming Lognormal Distribution**											
615	95% H-UCL				3.738	90% Chebyshev (MVUE) UCL						3.998
616	95% Chebyshev (MVUE) UCL				4.341	97.5% Chebyshev (MVUE) UCL						4.816
617	99% Chebyshev (MVUE) UCL				5.749							
618												
619	**Nonparametric Distribution Free UCL Statistics**											
620	**Data do not follow a Discernible Distribution (0.05)**											
621												
622	**Nonparametric Distribution Free UCLs**											
623	95% CLT UCL				9.36	95% Jackknife UCL						9.384
624	95% Standard Bootstrap UCL				9.418	95% Bootstrap-t UCL						26.53
625	95% Hall's Bootstrap UCL				21.47	95% Percentile Bootstrap UCL						9.71
626	95% BCA Bootstrap UCL				12.63							
627	90% Chebyshev(Mean, Sd) UCL				12.41	95% Chebyshev(Mean, Sd) UCL						15.47
628	97.5% Chebyshev(Mean, Sd) UCL				19.71	99% Chebyshev(Mean, Sd) UCL						28.05
629												
630	**Suggested UCL to Use**											
631	95% Chebyshev (Mean, Sd) UCL				15.47							
632												
633	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
634	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
635	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
636	For additional insight the user may want to consult a statistician.											
637												
638												
639	**Barium_0-15 - Lots**											
640												
641	**General Statistics**											
642	Total Number of Observations				154	Number of Distinct Observations						107
643						Number of Missing Observations						66
644	Minimum				15	Mean						1059
645	Maximum				7500	Median						757.5
646	SD				1140	Std. Error of Mean						91.88
647	Coefficient of Variation				1.077	Skewness						2.866
648												
649	**Normal GOF Test**											
650	Shapiro Wilk Test Statistic				0.747	**Shapiro Wilk GOF Test**						
651	5% Shapiro Wilk P Value				0	Data Not Normal at 5% Significance Level						
652	Lilliefors Test Statistic				0.18	**Lilliefors GOF Test**						
653	5% Lilliefors Critical Value				0.0714	Data Not Normal at 5% Significance Level						
654	**Data Not Normal at 5% Significance Level**											
655												
656	**Assuming Normal Distribution**											
657	**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**						
658	95% Student's-t UCL				1211	95% Adjusted-CLT UCL (Chen-1995)						1232
659						95% Modified-t UCL (Johnson-1978)						1214
660												
661	**Gamma GOF Test**											
662	A-D Test Statistic				0.842	**Anderson-Darling Gamma GOF Test**						
663	5% A-D Critical Value				0.785	Data Not Gamma Distributed at 5% Significance Level						
664	K-S Test Statistic				0.0569	**Kolmogrov-Smirnoff Gamma GOF Test**						
665	5% K-S Critical Value				0.0778	etected data appear Gamma Distributed at 5% Significance Lev						
666	**Detected data follow Appr. Gamma Distribution at 5% Significance Level**											
667												
668	**Gamma Statistics**											
669	k hat (MLE)				0.977	k star (bias corrected MLE)						0.962
670	Theta hat (MLE)				1084	Theta star (bias corrected MLE)						1100
671	nu hat (MLE)				300.9	nu star (bias corrected)						296.4

	A	B	C	D	E	F	G	H	I	J	K	L
672				MLE Mean (bias corrected)		1059				MLE Sd (bias corrected)		1079
673										Approximate Chi Square Value (0.05)		257.5
674				Adjusted Level of Significance		0.0484				Adjusted Chi Square Value		257.2
675												
676					**Assuming Gamma Distribution**							
677			95% Approximate Gamma UCL (use when n>=50)			1218			95% Adjusted Gamma UCL (use when n<50)			1220
678												
679					**Lognormal GOF Test**							
680				Shapiro Wilk Test Statistic		0.922	**Shapiro Wilk Lognormal GOF Test**					
681				5% Shapiro Wilk P Value		1.455E-10	Data Not Lognormal at 5% Significance Level					
682				Lilliefors Test Statistic		0.126	**Lilliefors Lognormal GOF Test**					
683				5% Lilliefors Critical Value		0.0714	Data Not Lognormal at 5% Significance Level					
684					**Data Not Lognormal at 5% Significance Level**							
685												
686					**Lognormal Statistics**							
687				Minimum of Logged Data		2.708				Mean of logged Data		6.372
688				Maximum of Logged Data		8.923				SD of logged Data		1.283
689												
690					**Assuming Lognormal Distribution**							
691				95% H-UCL		1725				90% Chebyshev (MVUE) UCL		1861
692				95% Chebyshev (MVUE) UCL		2106				97.5% Chebyshev (MVUE) UCL		2445
693				99% Chebyshev (MVUE) UCL		3113						
694												
695					**Nonparametric Distribution Free UCL Statistics**							
696					**Data appear to follow a Discernible Distribution at 5% Significance Level**							
697												
698					**Nonparametric Distribution Free UCLs**							
699				95% CLT UCL		1210				95% Jackknife UCL		1211
700				95% Standard Bootstrap UCL		1205				95% Bootstrap-t UCL		1244
701				95% Hall's Bootstrap UCL		1256				95% Percentile Bootstrap UCL		1224
702				95% BCA Bootstrap UCL		1237						
703				90% Chebyshev(Mean, Sd) UCL		1334				95% Chebyshev(Mean, Sd) UCL		1459
704				97.5% Chebyshev(Mean, Sd) UCL		1632				99% Chebyshev(Mean, Sd) UCL		1973
705												
706					**Suggested UCL to Use**							
707				95% Approximate Gamma UCL		1218						
708												
709	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
710	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
711	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
712	For additional insight the user may want to consult a statistician.											
713												
714												
715	**Lead_0-15 - Lots**											
716												
717					**General Statistics**							
718				Total Number of Observations		155				Number of Distinct Observations		94
719										Number of Missing Observations		65
720				Minimum		5.9				Mean		1516
721				Maximum		63000				Median		920
722				SD		5198				Std. Error of Mean		417.5
723				Coefficient of Variation		3.428				Skewness		11
724												
725					**Normal GOF Test**							
726				Shapiro Wilk Test Statistic		0.216	**Shapiro Wilk GOF Test**					
727				5% Shapiro Wilk P Value		0	Data Not Normal at 5% Significance Level					
728				Lilliefors Test Statistic		0.386	**Lilliefors GOF Test**					
729				5% Lilliefors Critical Value		0.0712	Data Not Normal at 5% Significance Level					
730					**Data Not Normal at 5% Significance Level**							
731												
732					**Assuming Normal Distribution**							

	A	B	C	D	E	F	G	H	I	J	K	L
733	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
734				95% Student's-t UCL		2207				95% Adjusted-CLT UCL (Chen-1995)		2597
735										95% Modified-t UCL (Johnson-1978)		2269
736												
737	**Gamma GOF Test**											
738				A-D Test Statistic		6.08	**Anderson-Darling Gamma GOF Test**					
739				5% A-D Critical Value		0.801	Data Not Gamma Distributed at 5% Significance Level					
740				K-S Test Statistic		0.192	**Kolmogrov-Smirnoff Gamma GOF Test**					
741				5% K-S Critical Value		0.0785	Data Not Gamma Distributed at 5% Significance Level					
742	**Data Not Gamma Distributed at 5% Significance Level**											
743												
744	**Gamma Statistics**											
745				k hat (MLE)		0.696				k star (bias corrected MLE)		0.687
746				Theta hat (MLE)		2179				Theta star (bias corrected MLE)		2208
747				nu hat (MLE)		215.7				nu star (bias corrected)		212.8
748				MLE Mean (bias corrected)		1516				MLE Sd (bias corrected)		1830
749										Approximate Chi Square Value (0.05)		180.1
750				Adjusted Level of Significance		0.0485				Adjusted Chi Square Value		179.8
751												
752	**Assuming Gamma Distribution**											
753	95% Approximate Gamma UCL (use when n>=50))					1792				95% Adjusted Gamma UCL (use when n<50)		1795
754												
755	**Lognormal GOF Test**											
756				Shapiro Wilk Test Statistic		0.937	**Shapiro Wilk Lognormal GOF Test**					
757				5% Shapiro Wilk P Value		2.2021E-7	Data Not Lognormal at 5% Significance Level					
758				Lilliefors Test Statistic		0.133	**Lilliefors Lognormal GOF Test**					
759				5% Lilliefors Critical Value		0.0712	Data Not Lognormal at 5% Significance Level					
760	**Data Not Lognormal at 5% Significance Level**											
761												
762	**Lognormal Statistics**											
763				Minimum of Logged Data		1.775				Mean of logged Data		6.455
764				Maximum of Logged Data		11.05				SD of logged Data		1.305
765												
766	**Assuming Lognormal Distribution**											
767				95% H-UCL		1938				90% Chebyshev (MVUE) UCL		2089
768				95% Chebyshev (MVUE) UCL		2368				97.5% Chebyshev (MVUE) UCL		2755
769				99% Chebyshev (MVUE) UCL		3514						
770												
771	**Nonparametric Distribution Free UCL Statistics**											
772	**Data do not follow a Discernible Distribution (0.05)**											
773												
774	**Nonparametric Distribution Free UCLs**											
775				95% CLT UCL		2203				95% Jackknife UCL		2207
776				95% Standard Bootstrap UCL		2210				95% Bootstrap-t UCL		4040
777				95% Hall's Bootstrap UCL		4764				95% Percentile Bootstrap UCL		2269
778				95% BCA Bootstrap UCL		3064						
779				90% Chebyshev(Mean, Sd) UCL		2769				95% Chebyshev(Mean, Sd) UCL		3336
780				97.5% Chebyshev(Mean, Sd) UCL		4124				99% Chebyshev(Mean, Sd) UCL		5670
781												
782	**Suggested UCL to Use**											
783				95% Chebyshev (Mean, Sd) UCL		3336						
784												
785	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
786	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
787	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
788	For additional insight the user may want to consult a statistician.											
789												

ATTACHMENT 3

TRENCH AIR MODELING

Table 1 Exposure-point concentrations (inhalation) for construction/utility workers in a trench: Groundwater less than 15 feet deep Nemasket Street Utility Easement New Bedford, Massachusetts	CAS No.	Molecular Weight MWi g/mol	Henry's Law Constant Hi atm-m3/mol	Gas-Phase Mass Transfer Coefficient KiG cm/s	Liquid-Phase Mass Transfer Coefficient KiL cm/s	Overall Mass Transfer Coefficient Ki cm/s	Concentration of Contaminant in Groundwater Cgw ug/L	Volatilization Factor VF L/m3	Concentration of Contaminant in Trench Ctrench ug/m3	Concentration of Contaminant in Trench Ctrench mg/m3
Trichloroethene	79-01-6	131.39	1.03E-02	4.08E-01	9.41E-04	9.36E-04	1.10E+00	3.84E-02	4.22E-02	4.22E-05

For Mass-Transfer Coefficients

Kg,H2O	0.833	cm/s
MWH2O	18	
Kg,O2	0.002	cm/s
MWO2	32	
T	**51.6**	F
T	284	K
R	8.20E-05	atm-m3/mol-K

For Emission Flux and Concentration in Trench

CF1	1.00E-03	L/cm3
CF2	1.00E+04	cm2/m2
CF3	3600	s/hr
F	**1**	
ACH	360	hr-1

Trench dimensions

Length	**31.5**	ft
	9.60	m
Width	**31.5**	ft
	9.60	m
Depth	**8**	ft
	2.44	m
Width/Depth	3.94	

Table 2 Exposure-point concentrations (inhalation) for construction/utility worker in a trench: Groundwater less than 15 feet deep Nemasket Street Lots New Bedford, Massachusetts	CAS No.	Molecular Weight MWi g/mol	Henry's Law Constant Hi atm-m3/mol	Gas-Phase Mass Transfer Coefficient KiG cm/s	Liquid-Phase Mass Transfer Coefficient KiL cm/s	Overall Mass Transfer Coefficient Ki cm/s	Concentration of Contaminant in Groundwater Cgw ug/L	Volatilization Factor VF L/m3	Concentration of Contaminant in Trench Ctrench ug/m3	Concentration of Contaminant in Trench Ctrench mg/m3
cis-1,2-Dichloroethene	156-59-2	96.94	4.08E-03	4.52E-01	1.10E-03	1.08E-03	3.00E+00	4.43E-02	1.33E-01	1.33E-04
Tetrachloroethene	127-18-4	165.83	1.84E-02	3.77E-01	8.37E-04	8.35E-04	1.30E+01	3.42E-02	4.45E-01	4.45E-04
Trichloroethene	79-01-6	131.39	1.03E-02	4.08E-01	9.41E-04	9.36E-04	2.40E+00	3.84E-02	9.21E-02	9.21E-05

For Mass-Transfer Coefficients

Kg,H2O	0.833	cm/s
MWH2O	18	
Kg,O2	0.002	cm/s
MWO2	32	
T	**51.6**	F
T	284	K
R	8.20E-05	atm-m3/mol-K

For Emission Flux and Concentration in Trench

CF1	1.00E-03	L/cm3
CF2	1.00E+04	cm2/m2
CF3	3600	s/hr
F	**1**	
ACH	360	hr-1

Trench dimensions

Length	**31.5**	ft
	9.60	m
Width	**31.5**	ft
	9.60	m
Depth	**8**	ft
	2.44	m
Width/Depth	3.94	

Table 3
SOIL TO OUTDOOR AIR - Maximum Concentrations
Nemasket Street Utility Easement - New Bedford, Massachusetts

	Soil EPC	Soil Temp.	Soil Temp.	Henry's Law Constant at ref. temp.	Henry's Law Reference Temp.	Normal Boiling Point	Enthalpy of vaporization at T_S	Critical Temp.	constant	Enthalpy of vaporization at T_S	Gas Constant	Henry's Law Constant at T_S	Gas Constant	Henry's Law Constant
	C_R	T_S	T'_S	H_R	T_R	T_B	$\Delta H_{v,B}$	T_C	n	$\Delta H_{v,TS}$	R_c	H_{TS}	R	H'_{TS}
Units:	µg/kg	°C	K	atm-m^3/mol	K	K	cal/mol	K	unitless	cal/mol	cal/mol-K	atm-m^3/mol	m^3-atm/mol-K	unitless
Formula:	**Input**	(10 for screening)	(T_S + 273.15)	lookup	(lookup+273.15)	lookup	lookup	lookup	(Note 7)	(Note 8)		(Note 9)		H_{TS} / (R * T'_S)
Analyte														
C9-C10 Aromatics	**2.50E+04**	1.00E+01	2.83E+02	7.92E-03	2.98E+02	NA	NA	NA	NA	NA	1.99E+00	7.92E-03	8.21E-05	3.41E-01
C9-C12 Aliphatics	**2.50E+04**	1.00E+01	2.83E+02	1.56E+00	2.98E+02	NA	NA	NA	NA	NA	1.99E+00	1.56E+00	8.21E-05	6.71E+01
Ethylbenzene	**3.80E+03**	1.00E+01	2.83E+02	7.88E-03	2.98E+02	4.09E+02	8.50E+03	6.17E+02	3.75E-01	1.02E+04	1.99E+00	3.18E-03	8.21E-05	1.37E-01
Naphthalene	**3.60E+04**	1.00E+01	2.83E+02	4.83E-04	2.98E+02	4.91E+02	1.04E+04	7.48E+02	3.70E-01	1.29E+04	1.99E+00	1.52E-04	8.21E-05	6.55E-03
Toluene	**1.50E+03**	1.00E+01	2.83E+02	6.64E-03	2.98E+02	3.84E+02	7.93E+03	5.92E+02	3.64E-01	9.15E+03	1.99E+00	2.93E-03	8.21E-05	1.26E-01
Xylene (total)	**1.95E+04**	1.00E+01	2.83E+02	6.73E-03	2.98E+02	4.12E+02	8.53E+03	6.16E+02	3.78E-01	1.02E+04	1.99E+00	2.69E-03	8.21E-05	1.16E-01

Table 3 (continued)
SOIL TO OUTDOOR AIR - Maximum Concentrations
Nemasket Street Utility Easement - New Bedford, Massachusetts

	Conversion Factor µg/kg to g/g	SCS soil type in vadose zone	Vadose zone soil dry bulk density	Vadose zone soil water-filled porosity	Organic carbon partition coefficient	Vadose zone organic carbon fraction	Soil-water partition coefficient	Vadose zone soil total porosity	Vadose zone soil air-filled porosity	Conversion Factor g/cm^3 to $\mu g/m^3$	Source Vapor Conc.
	Conv01	ST_v	ρ_b	$\theta_{w,v}$	K_{oc}	$f_{oc,v}$	K_d	n_v	$\theta_{a,v}$	Conv03	C_{source}
Units:	µg/kg / g/g	unitless	g/cm^3	cm^3/cm^3	cm^3/g	unitless	cm^3/g	cm^3/cm^3	cm^3/cm^3	g/cm^3 / $\mu g/m^3$	$\mu g/m^3$
Formula:		(Note 11)	lookup	lookup	lookup	(0.002 for screening)	$K_{oc} * f_{oc}$	lookup	$n_v - \theta_{w,v}$		(Note 21)
Analyte											
C9-C10 Aromatics	1.00E-09	SCL	1.63E+00	1.46E-01	1.78E+03	2.00E-03	3.56E+00	3.84E-01	2.38E-01	1.00E+12	2.31E+06
C9-C12 Aliphatics	1.00E-09	SCL	1.63E+00	1.46E-01	1.50E+05	2.00E-03	3.00E+02	3.84E-01	2.38E-01	1.00E+12	5.42E+06
Ethylbenzene	1.00E-09	SCL	1.63E+00	1.46E-01	2.04E+02	2.00E-03	4.08E-01	3.84E-01	2.38E-01	1.00E+12	1.00E+06
Naphthalene	1.00E-09	SCL	1.63E+00	1.46E-01	1.19E+03	2.00E-03	2.38E+00	3.84E-01	2.38E-01	1.00E+12	9.55E+04
Toluene	1.00E-09	SCL	1.63E+00	1.46E-01	1.40E+02	2.00E-03	2.80E-01	3.84E-01	2.38E-01	1.00E+12	4.87E+05
Xylene (total)	1.00E-09	SCL	1.63E+00	1.46E-01	2.49E+02	2.00E-03	4.99E-01	3.84E-01	2.38E-01	1.00E+12	3.73E+06

Table 3 (continued)
SOIL TO OUTDOOR AIR - Maximum Concentrations
Nemasket Street Utility Easement - New Bedford, Massachusetts

	Depth below grade to bottom of trench	Depth below grade to contamination	Source Trench Separation	Diffusivity in air	Diffusivity in water	Vadose zone Effective Diffusion Coeff.	Total Overall Effective Diffusion Coeff.	Area of Trench Below Grade	Trench Ventilation Rate	Pressure Diff. between soil & enclosed space	Vadose zone soil saturated hydraulic conductivity	Conversion Factor hr to s
	L_F	L_t	L_T	D_a	D_w	D_v^{eff}	D_T^{eff}	A_B	Q_{trench}	ΔP	$K_{s,v}$	Conv02
Units:	cm	cm	cm	cm^2/s	cm^2/s	cm^2/s	cm^2/s	cm^2	cm^3/s	$g/cm\text{-}s^2$	cm/hr	s/hr
Formula:	(120 (4') for screening)	(400 for screening)	$L_t - L_F$	lookup	lookup	(Note 13)	(Note 4)	(Note 2)	(Note 22)	(40 for screening)	lookup	
Analyte												
C9-C10 Aromatics	1.20E+02	4.00E+02	2.80E+02	7.00E-02	5.00E-06	3.99E-03	3.99E-03	3.29E+05	1.70E+05	4.00E+01	5.50E-01	3.60E+03
C9-C12 Aliphatics	1.20E+02	4.00E+02	2.80E+02	7.00E-02	5.00E-06	3.99E-03	3.99E-03	3.29E+05	1.70E+05	4.00E+01	5.50E-01	3.60E+03
Ethylbenzene	1.20E+02	4.00E+02	2.80E+02	7.50E-02	7.80E-06	4.27E-03	4.27E-03	3.29E+05	1.70E+05	4.00E+01	5.50E-01	3.60E+03
Naphthalene	1.20E+02	4.00E+02	2.80E+02	5.90E-02	7.50E-06	3.37E-03	3.37E-03	3.29E+05	1.70E+05	4.00E+01	5.50E-01	3.60E+03
Toluene	1.20E+02	4.00E+02	2.80E+02	8.70E-02	8.60E-06	4.95E-03	4.95E-03	3.29E+05	1.70E+05	4.00E+01	5.50E-01	3.60E+03
Xylene (total)	1.20E+02	4.00E+02	2.80E+02	7.69E-02	8.44E-06	4.38E-03	4.38E-03	3.29E+05	1.70E+05	4.00E+01	5.50E-01	3.60E+03

Table 3 (continued)
SOIL TO OUTDOOR AIR - Maximum Concentrations
Nemasket Street Utility Easement - New Bedford, Massachusetts

	Viscosity of water at 10^0C	Viscosity of water at system temp.	Density of water	Acceleration due to gravity	Vadose zone soil intrinsic permeability	Vadose zone residual soil water content	Vadose zone effective total fluid saturation	Vadose zone van Genuchten shape parameter	Vadose zone soil relative air permeability	Vadose zone soil effective vapor permeability	Thickness of soil between soilgas & trench
	$\mu_{w\text{-}10}$	μ_w	ρ_w	g	$k_{i,v}$	$\theta_{r,v}$	S_{te}	M_v	k_{rg}	k_v	L_{soil}
Units:	g/cm-s	g/cm-s	g/cm^3	cm/s^2	cm^2	cm^3/cm^3	unitless	unitless	unitless	cm^2	cm
Formula:		(Note 16)	(0.999 for screening)		(Note 17)	lookup	(Note 18)	lookup	(Note 19)	(Note 20)	(1 for screening)
Analyte											
C9-C10 Aromatics	1.31E-02	1.31E-02	9.99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09	1.00E+00
C9-C12 Aliphatics	1.31E-02	1.31E-02	9.99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09	1.00E+00
Ethylbenzene	1.31E-02	1.31E-02	9.99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09	1.00E+00
Naphthalene	1.31E-02	1.31E-02	9.99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09	1.00E+00
Toluene	1.31E-02	1.31E-02	9.99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09	1.00E+00
Xylene (total)	1.31E-02	1.31E-02	9.99E-01	9.81E+02	2.04E-09	6.30E-02	2.59E-01	2.48E-01	8.59E-01	1.75E-09	1.00E+00

Table 3 (continued)
SOIL TO OUTDOOR AIR - Maximum Concentrations
Nemasket Street Utility Easement - New Bedford, Massachusetts

	Vapor viscosity at avg. soil temp.	Avg. Vapor Flow Rate Into trench	Infinite Source Attenuation Coeff.	Infinite Source Trench Conc.
	μ_{TS}	Q_{soil}	α	C_{trench}
Units:	g/cm-s	cm^3/s	unitless	$\mu g/m^3$
Formula:	0.00018*(T'$_S$/298.15)^0.5	(Note 5)	(Note 6)	$C_{source} * \alpha$
Analyte				
C9-C10 Aromatics	1.75E-04	3.99E-04	2.35E-09	5.42E-03
C9-C12 Aliphatics	1.75E-04	3.99E-04	2.35E-09	1.27E-02
Ethylbenzene	1.75E-04	3.99E-04	2.35E-09	2.36E-03
Naphthalene	1.75E-04	3.99E-04	2.35E-09	2.24E-04
Toluene	1.75E-04	3.99E-04	2.35E-09	1.15E-03
Xylene (total)	1.75E-04	3.99E-04	2.35E-09	8.77E-03

Table 3 (continued)
SOIL TO OUTDOOR AIR - Maximum Concentrations
Nemasket Street Utility Easement - New Bedford, Massachusetts

Notes:

Reference: *User's Guide for Evaluating Subsurface Vapor Intrusion into Buildings* , USEPA, June 19, 2003.

(1) Purposely left blank

(2) For screening, assume a trench 4 ft deep, 3 ft wide, and 30 ft long.

(3) Purposely left blank

(4) $D_T^{eff} = L_T / (L_T / D_v^{eff})$

(5) $Q_{soil} = \Delta P * k_v * L_{soil}) / \mu_{TS}$; not from above reference

(6) $\alpha = [D_T^{eff} * A_B/(Q_{trench} * L_T)]/[(D_T^{eff} * A_B/(Q_{soil} * L_T))+1]$; assumes no resistance (Peclet number is infinite)

(7) A function of the ratio T_B/T_C:

T_B/T_C	n
<0.57	0.30
0.57-0.71	$0.74(T_B/T_C)-0.116$
>0.71	0.41

If values are not available for calculation, result is NA.

(8) $\Delta H_{v,TS} = \Delta H_{v,B} * [(1-T_S/T_C)/(1-T_B/T_C)]^n$; if values are not available for calculation, result is NA.
cleared from the trench air space.

(9) $H_{TS} = EXP[-\Delta H_{v,TS}/R_c * (1/T_S - 1/T_R)] * H_R$; if values are not available for calculation, result assumed to be H_R

(10) Purposely left blank

(11) Refer to 12 SCS soil types - if no site-specific information is available, use SCL for screening.
that the wind speed in the trench is a small fraction of the ground wind speed and that it could take up to 1 minute for a contaminant to be cleared from the trench air space.

(12) Purposely left blank

(13) $D_v^{eff} = D_a * (\theta_{a,v}^{3.33}/n_v^2) + (D_w/H'_{TS})(\theta_{w,v}^{3.33}/n_v^2)$

(14) Purposely left blank

(15) Purposely left blank

(16) $\mu_w = \mu_{w-10} * (T'_S / 283.15)^{0.5}$

(17) $k_{i,v} = K_{s,v} * 1/Conv02 * \mu_w / (\rho_w * g)$

(18) $S_{te} = (\theta_{w,v} - \theta_{r,v}) / (n_v - \theta_{r,v})$

(19) $k_{rg} = (1 - S_{te})^{0.5} * (1 - S_{te}^{1/Mv})^{2Mv}$

(20) $k_v = k_{i,v} * k_{rg}$; note that the model is very sensitive to this parameter and if site-specific values are available, they should be used.

(21) $C_{source} = H'_{TS} * C_R * Conv01 * \rho_b / (\theta_{w,v} + K_d * \rho_b + H'_{TS} * \theta_{a,v}) * Conv02$

(22) For screening, assume a trench 4 ft deep, 3 ft wide, 30 ft long and an air exchange rate of 60/hr. The air exchange rate is based on the assumption that the wind speed in the trench is a small fraction of the ground wind speed and that it could take up to 1 minute for a contaminant to be cleared from the trench air space.

ATTACHMENT 4

SHORTFORMS AND RISK CALCULATION SPREADSHEETS

Table 1
Utility Worker
Dermal Contact with Groundwater - MW-37, MW-39 and MW-3
Nemasket Street Utility Easement
New Bedford, Massachusetts

	Constituent	Ground Water Concentration (mg/l)	Kp cm/hr	RAF Dermal Cancer (--)	LADD Cancer (mg/kg-d)	RAF Dermal Noncancer (--)	ADD Noncancer (mg/kg-d)	Toxicity Values: Cancer Slope Factor (mg/kg-d)-1	Toxicity Values: Subchronic Non-Cancer Reference Dose (mg/kg-d)	Risk Estimates: Cancer Risk (--)	Risk Estimates: Non-Cancer Hazard Quotient (--)
VOCs											
79-01-6	Trichloroethene	1.1E-03	1.2E-02	1.00	1.6E-08	1.00	2.2E-06	5.0E-02	5.0E-04	8.E-10	4.4E-03
Metals											
7440-38-2	Arsenic	9.3E-04	1.0E-03	1.00	1.1E-09	1.00	1.6E-07	1.5E+00	3.0E-04	2.E-09	5.3E-04
7440-39-3	Barium	3.0E-01	1.0E-03	NC	NA	1.00	5.1E-05	NA	7.0E-02	NA	7.3E-04
18540-29-9	Chromium VI	1.5E-03	2.0E-03	NC	NA	1.00	5.1E-07	NA	2.0E-02	NA	2.6E-05
7439-92-1	Lead	6.3E-03	1.0E-04	NC	NA	1.00	1.1E-07	NA	7.5E-04	NA	1.4E-04
7440-02-0	Nickel	1.2E-02	2.0E-04	NC	NA	1.00	4.1E-07	NA	2.0E-02	NA	2.1E-05
7440-66-6	Zinc	4.7E-02	6.0E-04	NC	NA	1.00	4.8E-06	NA	3.0E-01	NA	1.6E-05

NA = Not Applicable
NC = No Criteria

LADD = Lifetime Average Daily Dose
RAF = Relative Absorption Coefficient
ADD = Average Daily Dose

	Cancer Risk	Hazard Index
TOTAL:	2.5E-09	5.8E-03

Bold = Cancer Risk >1.0E-05 or Hazard Quotient > 1.0E+00

Where:
LADD = (EPC x SA x Kp x RAF x ED x EF x EP x UC)/(BW x APcancer)
ADD = (EPC x SA x Kp x RAF x ED x EF x EP x UC)/(BW x APnoncancer)

Constituent Specific (CS)

Exposure Point Concentration (EPC):	CS	mg/l
Skin surface area (SA):	3477	cm2 [1]
Permeability constant (Kp):	CS	cm/h
Exposure Duration (ED):	8	hours/event [2]
Exposure Frequency (EF):	0.36	events/d [2]
Exposure Period (EP):	182	days [1]
Units Conversion (UC):	0.001	l/cm3
Body Weight (BW):	58	kg [1]
Averaging Period (APcancer):	25550	days [1]
Averaging Period (APnoncancer):	182	days [1]

[1] MADEP, 2014
[2] Best Professional Judgement

Table 2
Utility Worker
Inhalation of Trench Air Exposure Pathway - Soil and Groundwater (Maximum Scenario)
Nemasket Street Utility Easement
New Bedford, Massachusetts

		EPC	Estimated Dose		Toxicity Values		Risk Estimates	
	Constituent	Trench Air Concentration µg/m3	ADEcancer (Cancer) µg/m3	ADEnon-cancer (Non-cancer) µg/m3	Unit Risk µg/m3	Subchronic Noncancer Reference Concentration µg/m3	Cancer Risk (--)	Hazard Quotient (--)
VOCs								
100-41-4	Ethylbezene	2.4E-03	2.0E-06	2.8E-04	NA	9.0E+03	NA	3.E-08
108-88-3	Toluene	1.2E-03	9.8E-07	1.4E-04	NA	5.0E+03	NA	3.E-08
79-01-6	Trichloroethene	4.2E-02	3.6E-05	5.1E-03	4.0E-06	2.0E+00	1.E-10	3.E-03
C9-C12	C9-C12 Aliphatics	1.3E-02	1.1E-05	1.5E-03	NA	6.0E+02	NA	3.E-06
1330-20-7	Xylenes	8.8E-03	7.5E-06	1.1E-03	NA	4.0E+02	NA	3.E-06
91-20-3	Naphthalane	2.2E-04	1.9E-07	2.7E-05	NA	3.0E+00	NA	9.E-06
C9-C10	C9-C10 Aromatics	5.4E-03	4.6E-06	6.5E-04	NA	5.0E+02	NA	1.E-06

	Cancer Risk	Hazard Index
TOTAL:	1.4E-10	2.5E-03

Bold = Cancer Risk >1.0E-05 or Hazard Quotient > 1.0E+00

Where:

LADEcancer = IAC x EFx ED x EP/APcancer
ADEnon-cancer = IAC x EF x ED x EP / APnon-cancer
Cancer Risk = LADEcancer x UR
Hazard Quotient = ADEnon-cancer / Inhalation Reference Concentration

LADE = Life Time Average Daily Exposure
ADE = Average Daily Exposure
EPC = Exposure Point Concentration
$\mu g/m^3$ = micrograms per cubic meter

And where:

Exposure Frequency (EF) =	130	days/year (5 days a week for 26 weeks of exposure)
Exposure Duration (ED) =	8	hrs/day [1]
Exposure Period (EP) =	0.5	yr [1]
Unit Conversion (UC) =	0.042	days/hr
Averaging Period (APcancer) =	25550	days [1]
Averaging Period (APnon-cancer) =	182	days [1]

[1] MADEP, 2014

Table 3
Utility Worker
Dermal Contact with Groundwater - MW-37, MW-38 and MW-39
Nemasket Street Lots
New Bedford, Massachusetts

Constituent		Ground Water Concentration (mg/l)	Kp cm/hr	RAF Dermal Cancer (--)	LADD Cancer (mg/kg-d)	RAF Dermal Noncancer (--)	ADD Noncancer (mg/kg-d)	Toxicity Values: Cancer Slope Factor (mg/kg-d)-1	Toxicity Values: Subchronic Non-Cancer Reference Dose (mg/kg-d)	Risk Estimates: Cancer Risk (--)	Risk Estimates: Non-Cancer Hazard Quotient (--)
VOCs											
127-18-4	Tetrachloroethene	1.3E-02	3.3E-02	1.00	5.2E-07	1.00	7.3E-05	2.0E-02	6.0E-03	1.E-08	1.2E-02
79-01-6	Trichloroethene	2.4E-03	1.2E-02	1.00	3.4E-08	1.00	4.8E-06	5.0E-02	5.0E-04	2.E-09	9.5E-03
156-59-2	cis-1,2-Dichloroethene	3.0E-03	7.7E-03	NC	NA	1.00	3.9E-06	NA	2.0E-02	NA	2.0E-04
Metals											
7440-38-2	Arsenic	9.6E-04	1.0E-03	1.00	1.2E-09	1.00	1.6E-07	1.5E+00	3.0E-04	2.E-09	5.5E-04
7440-39-3	Barium	2.4E-01	1.0E-03	NC	NA	1.00	4.1E-05	NA	7.0E-02	NA	5.9E-04
18540-29-9	Chromium VI	9.5E-04	2.0E-03	NC	NA	1.00	3.3E-07	NA	2.0E-02	NA	1.6E-05
7440-02-0	Nickel	1.2E-02	2.0E-04	NC	NA	1.00	4.1E-07	NA	2.0E-02	NA	2.1E-05
7440-66-6	Zinc	4.7E-02	6.0E-04	NC	NA	1.00	4.8E-06	NA	3.0E-01	NA	1.6E-05

NA = Not Applicable
NC = No Criteria

LADD = Lifetime Average Daily Dose
RAF = Relative Absorption Coefficient
ADD = Average Daily Dose

	Cancer Risk	Hazard Index
TOTAL:	1.4.E-08	2.3E-02

Bold = Cancer Risk >1.0E-05 or Hazard Quotient > 1.0E+00

Where:
LADD = (EPC x SA x Kp x RAF x ED x EF x EP x UC)/(BW x APcancer)
ADD = (EPC x SA x Kp x RAF x ED x EF x EP x UC)/(BW x APnoncancer)

Constituent Specific (CS)

Exposure Point Concentration (EPC):	CS	mg/l
Skin surface area (SA):	3477	cm2 [1]
Permeability constant (Kp):	CS	cm/h
Exposure Duration (ED):	8	hours/event [2]
Exposure Frequency (EF):	0.36	events/d [2]
Exposure Period (EP):	182	days [1]
Units Conversion (UC):	0.001	l/cm3
Body Weight (BW):	58	kg [1]
Averaging Period (APcancer):	25550	days [1]
Averaging Period (APnoncancer):	182	days [1]

[1] MADEP, 2014
[2] Best Professional Judgement

Table 4
Utility Worker
Inhalation of Trench Air Exposure Pathway - Groundwater (Maximum Scenario)
Nemasket Street Lots
New Bedford, Massachusetts

		EPC	Estimated Dose		Toxicity Values		Risk Estimates	
	Constituent	Trench Air Concentration µg/m3	ADEcancer (Cancer) µg/m3	ADEnon-cancer (Non-cancer) µg/m3	Unit Risk µg/m3	Subchronic Noncancer Reference Concentration µg/m3	Cancer Risk (--)	Hazard Quotient (--)
VOCs								
127-18-4	Tetrachloroethene	4.5E-01	3.8E-04	5.4E-02	3.0E-06	4.0E+01	1.E-09	1.E-03
156-59-2	cis-1,2-Dichloroethene	1.3E-01	1.1E-04	1.6E-02	NA	6.0E+01	NA	3.E-04
79-01-6	Trichloroethene	9.2E-02	7.9E-05	1.1E-02	4.0E-06	2.0E+00	3.E-10	6.E-03

	Cancer Risk	Hazard Index
TOTAL:	1.5E-09	7.1E-03

Where:

LADEcancer = IAC x EFx ED x EP/APcancer
ADEnon-cancer = IAC x EF x ED x EP / APnon-cancer
Cancer Risk = LADEcancer x UR
Hazard Quotient = ADEnon-cancer / Inhalation Reference Concentration

Bold = Cancer Risk >1.0E-05 or Hazard Quotient > 1.0E+00

LADE = Life Time Average Daily Exposure
ADE = Average Daily Exposure
EPC = Exposure Point Concentration
µg/m^3 = micrograms per cubic meter

And where:

Exposure Frequency (EF) =	130	days/year (5 days a week for 26 weeks of exposure)
Exposure Duration (ED) =	8	hrs/day [1]
Exposure Period (EP) =	0.5	yr [1]
Unit Conversion (UC) =	0.042	days/hr
Averaging Period (APcancer) =	25550	days [1]
Averaging Period (APnon-cancer) =	182	days [1]

[1] MADEP, 2014

1-Day Utility Worker - Soil: Table CW-1 (Easement; 0-6' bgs)
Exposure Point Concentration (EPC) and Risk
Based on Construction Worker 18-25 years of age

ShortForm Version 10-12
Vlookup Version v0114

ELCR (all chemicals) = 7E-07
HI (all chemicals) = 1E+00

****Do not insert or delete any rows****

Click on empty cell below and select OHM using arrow.

Oil or Hazardous Material (OHM)	EPC (mg/kg)	ELCR ingestion	ELCR dermal	ELCR inhalation GI	ELCR inhalation pulmonary	$ELCR_{total}$	Subchronic HQ_{ing}	Subchronic HQ_{derm}	Subchronic HQ_{inh-GI}	Subchronic HQ_{inh}	HQ_{total}
AROMATICS C9 to C10 1,3,5-Trimethylbenzene	8.4E-03						6.9E-09	1.4E-08	1.8E-10	1.3E-10	2.1E-08
ALIPHATICS C9 to C12	2.1E+01						5.2E-06	1.1E-05	1.4E-07	2.6E-07	1.6E-05
AROMATICS C9 to C10	2.1E+01						1.7E-05	3.5E-05	4.5E-07	3.2E-07	5.3E-05
Ethylbenzene	1.9E+00						9.4E-06	2.8E-06	2.4E-07	1.6E-09	1.2E-05
Naphthalene	2.6E+00						9.7E-07	3.3E-06	2.5E-08	6.5E-06	1.1E-05
Toluene	7.5E-01						2.3E-07	7.0E-08	6.0E-09	1.1E-09	3.1E-07
XYLENES (Mixed Isomers)	9.9E+00						6.1E-06	1.8E-06	1.6E-07	1.8E-07	8.3E-06
ALIPHATICS C9 to C18	1.8E+01						4.4E-06	8.9E-06	1.1E-07	2.2E-07	1.4E-05
ALIPHATICS C19 to C36	3.9E+02						1.6E-05	3.3E-05	4.2E-07		4.9E-05
AROMATICS C11 to C22	6.9E+02						1.7E-04	5.7E-04	4.4E-06	1.0E-05	7.6E-04
Acenaphthene	1.6E+00						5.9E-07	2.0E-06	1.5E-08	2.4E-08	2.6E-06
Acenaphthylene	5.8E-01						1.4E-07	4.8E-07	3.7E-09	8.6E-09	6.3E-07
Anthracene	4.4E+00						3.2E-07	1.1E-06	8.4E-09	6.5E-08	1.5E-06
Benzo(a)anthracene	1.2E+01	4.7E-09	3.2E-09	1.2E-10	1.4E-10	8.1E-09	3.0E-06	2.0E-06	7.8E-08	1.8E-07	5.3E-06
Benzo(a)pyrene	1.0E+01	3.9E-08	2.6E-08	1.0E-09	1.1E-09	6.8E-08	2.5E-06	1.7E-06	6.6E-08	1.5E-07	4.4E-06
Benzo(b)fluoranthene	1.4E+01	5.2E-09	3.5E-09	1.4E-10	1.5E-10	9.0E-09	3.3E-06	2.2E-06	8.7E-08	2.0E-07	5.9E-06
Benzo(g,h,i)perylene	3.1E+00						7.7E-07	2.6E-06	2.0E-08	4.7E-08	3.4E-06
Benzo(k)fluoranthene	3.1E+00	1.2E-10	8.0E-11	3.1E-12	3.4E-12	2.1E-10	7.6E-07	5.1E-07	2.0E-08	4.6E-08	1.3E-06
Chrysene	7.5E+00	2.9E-10	1.9E-10	7.5E-12	8.3E-12	5.0E-10	1.9E-06	1.2E-06	4.8E-08	1.1E-07	3.3E-06
DIBENZO(a,h)ANTHRACENE	1.1E+00	4.2E-09	2.8E-09	1.1E-10	1.2E-10	7.2E-09	2.7E-07	1.8E-07	7.0E-09	1.6E-08	4.7E-07
Fluoranthene	1.6E+01						1.2E-05	3.9E-05	3.0E-07	2.4E-07	5.1E-05
Fluorene	2.5E+00						4.7E-07	1.6E-06	1.2E-08	3.8E-08	2.1E-06
Indeno(1,2,3-cd)pyrene	3.6E+00	1.4E-09	9.2E-10	3.5E-11	3.9E-11	2.4E-09	8.7E-07	5.9E-07	2.3E-08	5.3E-08	1.5E-06
METHYLNAPHTHALENE, 2-	1.1E+00						2.1E-05	7.0E-05	5.4E-07	1.7E-08	9.1E-05
Phenanthrene	1.7E+01						4.2E-06	1.4E-05	1.1E-07	2.5E-07	1.9E-05
Pyrene	1.4E+01						3.4E-06	1.1E-05	8.9E-08	2.1E-07	1.5E-05
POLYCHLORINATED BIPHENYLS (PCBs)	3.5E+01	1.2E-07	1.2E-07	3.2E-09	1.8E-10	2.5E-07	1.7E-01	1.7E-01	4.5E-03	1.3E-02	3.6E-01
TCDD, 2,3,7,8- (equivalents)	6.4E-04	1.7E-07	1.7E-07	4.4E-09	1.1E-09	3.4E-07	2.3E-01	2.3E-01	5.8E-03	2.4E-03	4.6E-01
Arsenic	1.5E+01	2.0E-08	1.2E-08	5.2E-10	2.4E-09	3.5E-08	6.3E-03	3.8E-03	1.6E-04	5.7E-03	1.6E-02
Barium	9.9E+02						3.5E-03	3.5E-03	9.0E-05	1.5E-03	8.5E-03
Beryllium	1.7E-01				2.2E-11	2.2E-11	8.5E-06	8.6E-06	2.2E-07	6.4E-05	8.2E-05
Cadmium	5.3E+00				5.1E-10	5.1E-10	1.3E-03	2.6E-04	3.4E-05	2.0E-03	3.6E-03
CHROMIUM(III)	9.9E+01						1.6E-05	1.6E-05	4.2E-07	2.5E-03	2.5E-03
Lead	1.4E+03						2.2E-01	2.7E-02	5.8E-03	1.0E-02	2.7E-01
Mercury	8.4E-01						3.5E-04	7.0E-04	9.0E-06	2.1E-05	1.1E-03
Nickel	2.8E+01				7.1E-10	7.1E-10	3.5E-04	7.0E-04	9.0E-06	2.1E-04	1.3E-03
Silver	1.3E+00						6.4E-05	1.9E-04	1.6E-06	6.9E-05	3.3E-04
Vanadium	6.4E+01						1.7E-03	1.8E-03	4.5E-05	4.7E-04	4.0E-03
Zinc	6.7E+02						5.5E-04	5.5E-04	1.4E-05	3.6E-03	4.7E-03

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Construction Worker - Soil: Table CW-2

Equations to Calculate Cancer Risk for Construction Worker

Vlookup Version v0114

Cancer Risk from Ingestion

$$ELCR_{ing} = LADD_{ing} * CSF_{oral}$$

$$LADD_{ing} = \frac{EPC * IR * RAF_{c\text{-}ing} * EF * ED_{ing} * EP * C1}{BW * AP_{lifetime}}$$

Cancer Risk from Dermal Absorption

$$ELCR_{derm} = LADD_{derm} * CSF_{oral}$$

$$LADD_{derm} = \frac{EPC * SA * AF * RAF_{c\text{-}derm} * EF * ED_{derm} * EP * C1}{BW * AP_{lifetime}}$$

Cancer Risk from Particulate Inhalation - Gastrointestinal Absorption

$$ELCR_{inh\text{-}GI} = LADD_{inh\text{-}GI} * CSF_{oral}$$

$$LADD_{inh\text{-}GI} = \frac{EPC * RCAF_{inh\text{-}gi} * PM_{10} * VR_{work} * RAF_{c\text{-}ing} * EF * ED_{inh} * EP * C2 * C3 * C4}{BW * AP_{lifetime}}$$

Cancer Risk from Particulate Inhalation - Pulmonary Absorption

$$ELCR_{inh} = LADD_{inh} * CSF_{inhalation}$$

$$LADD = \frac{EPC * RCAF_{inh} * PM_{10} * VR_{work} * RAF_{c\text{-}inh} * EF * ED_{inh} * EP * C2 * C3 * C4}{BW * AP_{lifetime}}$$

Parameter	Value	Units
CSF	OHM-specific	$(mg/kg\text{-}day)^{-1}$
LADD	age/OHM-specific	mg/kg-day
EPC	OHM-specific	mg/kg
IR	100	mg/day
$RAF_{c\text{-}ing}$	OHM-specific	dimensionless
$RAF_{c\text{-}derm}$	OHM-specific	dimensionless
$RAF_{c\text{-}inh}$	OHM-specific	dimensionless
EF	0.143	event/day
$ED_{ing\ \&\ derm}$	1	day/event
ED_{inh}	0.333	day/event
EP	182	days
C1	1.0E-06	kg/mg
C2	1.0E-09	kg/µg
C3	1440	min/days
C4	1.0E-03	m^3/L
BW	58.0	kg
$AP_{(lifetime)}$	25,550	days
VR_{work}	60	L/min
AF	0.29	mg/cm^2
SA	3473	cm^2/day
$RCAF_{inh\text{-}gi}$	1.5	dimensionless
$RCAF_{inh}$	0.5	dimensionless
PM_{10}	60	$\mu g/m^3$

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Construction Worker - Soil: Table CW-3

Equations to Calculate Noncancer Risk for Construction Worker

Vlookup Version v0114

Noncancer Risk from Ingestion

$$HQ_{ing} = \frac{ADD_{ing}}{RfD_{oral\text{-}subchronic}}$$

$$ADD_{ing} = \frac{EPC * IR * RAF_{nc\text{-}ing} * EF * ED_{ing} * EP * C1}{BW * AP_{noncancer}}$$

Noncancer Risk from Dermal Absorption

$$HQ_{derm} = \frac{ADD_{derm}}{RfD_{oral\text{-}subchronic}}$$

$$ADD_{dermal} = \frac{EPC * SA * AF * RAF_{nc\text{-}derm} * EF * ED_{dermal} * EP * C1}{BW * AP_{noncancer}}$$

Noncancer Risk from Particulate Inhalation - Gastrointestinal Absorption

$$HQ_{inh\text{-}GI} = \frac{ADD_{inh\text{-}GI}}{RfD_{oral\text{-}subchronic}}$$

$$ADD_{inh\text{-}GI} = \frac{EPC * RCAF_{inh\text{-}gi} * PM_{10} * VR_{work} * RAF_{nc\text{-}ing} * EF * ED_{inh} * EP * C2 * C3 * C4}{BW * AP_{noncancer}}$$

Noncancer Risk from Particulate Inhalation - Pulmonary Absorption

$$HQ_{inh} = \frac{ADD}{RfD_{inhalation\text{-}subchronic}}$$

$$ADD_{inh} = \frac{EPC_{soil} * RCAF_{inh} * PM_{10} * VR_{work} * RAF_{nc\text{-}inh} * EF * ED_{inh} * EP * C2 * C3 * C4}{BW * AP_{noncancer}}$$

Parameter	Value	Units
RfD	OHM-specific	mg/kg-day
ADD	OHM-specific	mg/kg-day
EPC	OHM-specific	mg/kg
IR	100	mg/day
$RAF_{nc\text{-}ing}$	OHM-specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM-specific	dimensionless
$RAF_{nc\text{-}inh}$	OHM-specific	dimensionless
EF	0.143	event/day
$ED_{ing\ \&\ derm}$	1	day/event
ED_{inh}	0.333	day/event
EP	182	days
C1	1.0E-06	kg/mg
C2	1.0E-09	kg/µg
C3	1440	min/days
C4	1.0E-03	m^3/L
BW	58.0	kg
$AP_{noncancer}$	182	days
VR_{work}	60	L/min
AF	0.29	mg/cm^2
SA	3473	cm^2/day
$RCAF_{inh\text{-}gi}$	1.5	dimensionless
$RCAF_{inh}$	0.5	dimensionless
PM10	60	$µg/m^3$

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Construction Worker - Soil: Table CW-4
Definitions and Exposure Factors

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Parameter	Value	Units	Notes
ELCR - Excess Lifetime Cancer Risk	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
HI - Hazard Index	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
CSF - Cancer Slope Factor	chemical specific	$(mg/kg\text{-}day)^{-1}$	see Table CW-5.
RfD - Reference Dose	chemical specific	mg/kg-day	see Table CW-5.
LADD - Lifetime Average Daily Dose	chemical specific	mg/kg-day	Pathway specific. See Table CW-2.
ADD - Average Daily Dose	chemical specific	mg/kg-day	Pathway specific. See Table CW-3.
EPC - Exposure Point Concentration	chemical specific	mg/kg	see Table CW-1.
IR - Soil Ingestion Rate	100	mg/day	MADEP. 2002. Technical Update: Calculation of an Enhanced Soil Ingestion Rate. (http://www.mass.gov/dep/ors/orspubs.htm).
RAF_c - Relative Absorption Factor for Cancer Effects	chemical specific	dimensionless	Pathway specific - see Table CW-5.
RAF_{nc} - Relative Absorption Factor for Noncancer Effects	chemical specific	dimensionless	Pathway specific - see Table CW-5.
EF - Exposure Frequency	0.143	event/day	1 events (days) / 7 events (days) in a week; MADEP 1995 Guidance for Disposal Site Risk Characterization pg B-38.
$ED_{ing,derm}$ - Exposure Duration for ingestion or dermal exposure	1	day/event	
ED_{inh} - Exposure Duration for inhalation exposure	0.333	day/event	Represents 8 hours / event.
EP - Exposure Period	182	days	6 months; MADEP 1995 Guidance for Disposal Site Risk Characterization.
BW - Body Weight	58.0	kg	U.S. EPA. 1997. Exposure Factors Handbook. Table 7-7, Females, ages 18 - 25.
$AP_{(lifetime)}$ - Averaging Period for lifetime	25,550	days	Represents 70 years
$AP_{(noncancer)}$ - Averaging Period for noncancer	182	days	6 months; MADEP 1995 Guidance for Disposal Site Risk Characterization.
AF - Adherence Factor	0.29	mg/cm^2	MA DEP. 2002 Technical Update: Weighted Skin-Soil Adherence Factors. (http://www.mass.gov/dep/ors/orspubs.htm)
VR_{work} - Ventilation Rate during work (heavy exertion)	60	L/min	Table B-4 MADEP 1995 Guidance for Disposal Site Risk Characterization.
SA - Surface Area	3473	cm^2/day	MADEP. 1995. Guidance for Disposal Site Risk Characterization. 50th percentile for females. Appendix Table B-2.
$IFAF_{inh\text{-}gi}$ - Ingestion Fraction Adjustment Factor, gastrointestinal	1.5	dimensionless	MADEP 2007. Characterization of Risks Due to Inhalation of Particulates by Construction Workers
$IFAF_{inh}$ - Inhalation Fraction Adjustment Factor, inhalation	0.5	dimensionless	MADEP 2002. Characterization of Risks Due to Inhalation of Particulates by Construction Workers
PM10 - Concentration of PM_{10}	60	$\mu g/m^3$	MADEP 1995 Guidance for Disposal Site Risk Characterization pg B-11

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Construction Worker - Soil: Table CW-5
Chemical-Specific Data

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Oil or Hazardous Material	Oral CSF $(mg/kg\text{-}day)^{-1}$	$RAF_{c\text{-}ing}$	$RAF_{c\text{-}derm}$	$RAF_{c\text{-}inh}$	Inhalation CSF $(mg/kg\text{-}day)^{-1}$	Subchronic Oral RfD mg/kg-day	Subchronic $RAF_{nc\text{-}ing}$	Subchronic $RAF_{nc\text{-}derm}$	Subchronic $RAF_{nc\text{-}inh}$	Subchronic Inhalation RfD
AROMATICS C9 to C10						3.0E-01	1	0.2	1	1.4E-01
ALIPHATICS C9 to C12						1.0E+00	1	0.2	1	1.7E-01
AROMATICS C9 to C10						3.0E-01	1	0.2	1	1.4E-01
Ethylbenzene						5.0E-02	1	0.03	1	2.6E+00
Naphthalene						2.0E-01	0.3	0.1	1	8.6E-04
Toluene						8.0E-01	1	0.03	1	1.4E+00
XYLENES (Mixed Isomers)						4.0E-01	1	0.03	1	1.1E-01
ALIPHATICS C9 to C18						1.0E+00	1	0.2	1	1.7E-01
ALIPHATICS C19 to C36						6.0E+00	1	0.2		
AROMATICS C11 to C22						3.0E-01	0.3	0.1	1	1.4E-01
Acenaphthene						2.0E-01	0.3	0.1	1	1.4E-01
Acenaphthylene						3.0E-01	0.3	0.1	1	1.4E-01
Anthracene						1.0E+00	0.3	0.1	1	1.4E-01
Benzo(a)anthracene	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
Benzo(a)pyrene	7.3E+00	0.3	0.02	1	7.3E+00	3.0E-01	0.3	0.02	1	1.4E-01
Benzo(b)fluoranthene	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
Benzo(g,h,i)perylene						3.0E-01	0.3	0.1	1	1.4E-01
Benzo(k)fluoranthene	7.3E-02	0.3	0.02	1	7.3E-02	3.0E-01	0.3	0.02	1	1.4E-01
Chrysene	7.3E-02	0.3	0.02	1	7.3E-02	3.0E-01	0.3	0.02	1	1.4E-01
DIBENZO(a,h)ANTHRACENE	7.3E+00	0.3	0.02	1	7.3E+00	3.0E-01	0.3	0.02	1	1.4E-01
Fluoranthene						1.0E-01	0.3	0.1	1	1.4E-01
Fluorene						4.0E-01	0.3	0.1	1	1.4E-01
Indeno(1,2,3-cd)pyrene	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
METHYLNAPHTHALENE, 2-						4.0E-03	0.3	0.1	1	1.4E-01
Phenanthrene						3.0E-01	0.3	0.1	1	1.4E-01
Pyrene						3.0E-01	0.3	0.1	1	1.4E-01
POLYCHLORINATED BIPHENYLS (PCBs)	2.0E+00	1	0.1	1	3.5E-01	5.0E-05	1	0.1	1	5.7E-06
TCDD, 2,3,7,8- (equivalents)	1.5E+05	1	0.1	1	1.2E+05	7.0E-10	1	0.1	1	5.7E-10
Arsenic	1.5E+00	0.5	0.03	1	1.1E+01	3.0E-04	0.5	0.03	1	5.7E-06
Barium						7.0E-02	1	0.1	1	1.4E-03
Beryllium					8.4E+00	5.0E-03	1	0.1	1	5.7E-06
Cadmium					6.3E+00	5.0E-04	0.5	0.01	1	5.7E-06
CHROMIUM(III)						1.5E+00	1	0.1	1	8.6E-05
Lead						7.5E-04	0.5	0.006	1	2.9E-04
Mercury						3.0E-04	0.5	0.1	1	8.6E-05
Nickel					1.7E+00	2.0E-02	1	0.2	1	2.9E-04
Silver						5.0E-03	1	0.3	1	4.0E-05
Vanadium						9.0E-03	1	0.1	1	2.9E-04
Zinc						3.0E-01	1	0.1	1	4.0E-04

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Construction Worker - Soil: Table CW-6
Cyanide Calculations

The acute concentration of available cyanide in soil is the level at or below which adverse human health effects would not be expected following an acute exposure. For construction workers, the subchronic concentrations calculated in the EPCs tab are more conservative than the acute concentrations. The acute calculation is below.

Acute Concentration Calculation for Cyanide

$$\text{Concentration} = \frac{\text{HQ x Acute Dose Limit x BW}}{\text{IR x RAF x Conversion Factor}}$$

Parameter	Value	Units
HQ (Hazard Quotient)	1	(unitless)
Acute Dose Limit	0.01	mg CN/ kg BW
BW (Body Weight) 11-12	58	kg
IR (1-time reasonable max)	Site-specific	mg
Conversion Factor	1.0E-06	kg soil / mg soil
RAF	1	(unitless)

The toxicological basis for estimating an allowable one-time dose is documented in MassDEP's 1992 *Background Documentation for the Development of an "Available Cyanide" Benchmark Concentration,* which is published at: http://www.mass.gov/eea/docs/dep/toxics/stypes/dscyanide.pdf

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1-Day Utility Worker - Soil: Table CW-1 (Easement; 0-15' bgs)
Exposure Point Concentration (EPC) and Risk
Based on Construction Worker 18-25 years of age

ShortForm Version 10-12
Vlookup Version v0114

ELCR (all chemicals) = 7E-07
HI (all chemicals) = 1E+00

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Click on empty cell below and select OHM using arrow.

Oil or Hazardous Material (OHM)	EPC (mg/kg)	ELCR ingestion	ELCR dermal	ELCR inhalation GI	ELCR inhalation pulmonary	$ELCR_{total}$	Subchronic HQ_{ing}	Subchronic HQ_{derm}	Subchronic HQ_{inh-GI}	Subchronic HQ_{inh}	HQ_{total}
AROMATICS C9 to C10 1,3,5-Trimethylbenzene	8.4E-03						6.9E-09	1.4E-08	1.8E-10	1.3E-10	2.1E-08
ALIPHATICS C9 to C12	2.1E+01						5.2E-06	1.1E-05	1.4E-07	2.6E-07	1.6E-05
AROMATICS C9 to C10	2.1E+01						1.7E-05	3.5E-05	4.5E-07	3.2E-07	5.3E-05
Ethylbenzene	1.9E+00						9.4E-06	2.8E-06	2.4E-07	1.6E-09	1.2E-05
Naphthalene	2.3E+00						8.5E-07	2.9E-06	2.2E-08	5.7E-06	9.5E-06
Toluene	7.5E-01						2.3E-07	7.0E-08	6.0E-09	1.1E-09	3.1E-07
XYLENES (Mixed Isomers)	9.9E+00						6.1E-06	1.8E-06	1.6E-07	1.8E-07	8.3E-06
ALIPHATICS C9 to C18	1.8E+01						4.4E-06	8.9E-06	1.1E-07	2.2E-07	1.4E-05
ALIPHATICS C19 to C36	3.9E+02						1.6E-05	3.3E-05	4.2E-07		4.9E-05
AROMATICS C11 to C22	6.9E+02						1.7E-04	5.7E-04	4.4E-06	1.0E-05	7.6E-04
Acenaphthene	1.4E+00						5.2E-07	1.7E-06	1.3E-08	2.1E-08	2.3E-06
Acenaphthylene	5.3E-01						1.3E-07	4.4E-07	3.4E-09	7.9E-09	5.8E-07
Anthracene	3.8E+00						2.8E-07	9.4E-07	7.3E-09	5.7E-08	1.3E-06
Benzo(a)anthracene	1.1E+01	4.1E-09	2.7E-09	1.1E-10	1.2E-10	7.0E-09	2.6E-06	1.7E-06	6.7E-08	1.6E-07	4.6E-06
Benzo(a)pyrene	8.9E+00	3.4E-08	2.3E-08	8.9E-10	9.9E-10	5.9E-08	2.2E-06	1.5E-06	5.7E-08	1.3E-07	3.9E-06
Benzo(b)fluoranthene	1.2E+01	4.6E-09	3.1E-09	1.2E-10	1.3E-10	7.9E-09	2.9E-06	2.0E-06	7.6E-08	1.8E-07	5.2E-06
Benzo(g,h,i)perylene	2.7E+00						6.7E-07	2.3E-06	1.7E-08	4.1E-08	3.0E-06
Benzo(k)fluoranthene	2.7E+00	1.0E-10	7.0E-11	2.7E-12	3.0E-12	1.8E-10	6.7E-07	4.5E-07	1.7E-08	4.0E-08	1.2E-06
Chrysene	6.5E+00	2.5E-10	1.7E-10	6.5E-12	7.2E-12	4.3E-10	1.6E-06	1.1E-06	4.2E-08	9.7E-08	2.8E-06
DIBENZO(a,h)ANTHRACENE	9.8E-01	3.8E-09	2.5E-09	9.7E-11	1.1E-10	6.5E-09	2.4E-07	1.6E-07	6.2E-09	1.5E-08	4.2E-07
Fluoranthene	1.4E+01						1.0E-05	3.4E-05	2.6E-07	2.0E-07	4.4E-05
Fluorene	2.2E+00						4.1E-07	1.4E-06	1.1E-08	3.3E-08	1.8E-06
Indeno(1,2,3-cd)pyrene	3.1E+00	1.2E-09	8.0E-10	3.1E-11	3.4E-11	2.1E-09	7.6E-07	5.1E-07	2.0E-08	4.6E-08	1.3E-06
METHYLNAPHTHALENE, 2-	1.0E+00						1.9E-05	6.2E-05	4.8E-07	1.5E-08	8.1E-05
Phenanthrene	1.5E+01						3.6E-06	1.2E-05	9.4E-08	2.2E-07	1.6E-05
Pyrene	1.2E+01						3.0E-06	9.9E-06	7.7E-08	1.8E-07	1.3E-05
POLYCHLORINATED BIPHENYLS (PCBs)	3.2E+01	1.1E-07	1.1E-07	2.9E-09	1.7E-10	2.3E-07	1.6E-01	1.6E-01	4.1E-03	1.2E-02	3.3E-01
TCDD, 2,3,7,8- (equivalents)	6.4E-04	1.7E-07	1.7E-07	4.4E-09	1.1E-09	3.4E-07	2.3E-01	2.3E-01	5.8E-03	2.4E-03	4.6E-01
Arsenic	1.4E+01	1.9E-08	1.1E-08	4.8E-10	2.3E-09	3.3E-08	5.8E-03	3.5E-03	1.5E-04	5.3E-03	1.5E-02
Barium	9.0E+02						3.2E-03	3.2E-03	8.2E-05	1.3E-03	7.8E-03
Beryllium	2.1E-01				2.6E-11	2.6E-11	1.0E-05	1.0E-05	2.6E-07	7.7E-05	9.8E-05
Cadmium	4.9E+00				4.6E-10	4.6E-10	1.2E-03	2.4E-04	3.1E-05	1.8E-03	3.3E-03
CHROMIUM(III)	9.1E+01						1.5E-05	1.5E-05	3.9E-07	2.3E-03	2.3E-03
Lead	1.3E+03						2.1E-01	2.5E-02	5.4E-03	9.4E-03	2.5E-01
Mercury	7.7E-01						3.2E-04	6.4E-04	8.2E-06	1.9E-05	9.8E-04
Nickel	2.5E+01				6.4E-10	6.4E-10	3.1E-04	6.2E-04	8.0E-06	1.9E-04	1.1E-03
Silver	1.2E+00						6.1E-05	1.8E-04	1.6E-06	6.5E-05	3.1E-04
Vanadium	5.6E+01						1.5E-03	1.5E-03	3.9E-05	4.1E-04	3.5E-03
Zinc	5.7E+02						4.7E-04	4.8E-04	1.2E-05	3.1E-03	4.0E-03

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Construction Worker - Soil: Table CW-2

Equations to Calculate Cancer Risk for Construction Worker

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Cancer Risk from Ingestion

$$ELCR_{ing} = LADD_{ing} * CSF_{oral}$$

$$LADD_{ing} = \frac{EPC * IR * RAF_{c\text{-}ing} * EF * ED_{ing} * EP * C1}{BW * AP_{lifetime}}$$

Cancer Risk from Dermal Absorption

$$ELCR_{derm} = LADD_{derm} * CSF_{oral}$$

$$LADD_{derm} = \frac{EPC * SA * AF * RAF_{c\text{-}derm} * EF * ED_{derm} * EP * C1}{BW * AP_{lifetime}}$$

Cancer Risk from Particulate Inhalation - Gastrointestinal Absorption

$$ELCR_{inh\text{-}GI} = LADD_{inh\text{-}GI} * CSF_{oral}$$

$$LADD_{inh\text{-}GI} = \frac{EPC * RCAF_{inh\text{-}gi} * PM_{10} * VR_{work} * RAF_{c\text{-}ing} * EF * ED_{inh} * EP * C2 * C3 * C4}{BW * AP_{lifetime}}$$

Cancer Risk from Particulate Inhalation - Pulmonary Absorption

$$ELCR_{inh} = LADD_{inh} * CSF_{inhalation}$$

$$LADD = \frac{EPC * RCAF_{inh} * PM_{10} * VR_{work} * RAF_{c\text{-}inh} * EF * ED_{inh} * EP * C2 * C3 * C4}{BW * AP_{lifetime}}$$

Parameter	Value	Units
CSF	OHM-specific	$(mg/kg\text{-}day)^{-1}$
LADD	age/OHM-specific	mg/kg-day
EPC	OHM-specific	mg/kg
IR	100	mg/day
$RAF_{c\text{-}ing}$	OHM-specific	dimensionless
$RAF_{c\text{-}derm}$	OHM-specific	dimensionless
$RAF_{c\text{-}inh}$	OHM-specific	dimensionless
EF	0.143	event/day
$ED_{ing\ \&\ derm}$	1	day/event
ED_{inh}	0.333	day/event
EP	182	days
C1	1.0E-06	kg/mg
C2	1.0E-09	kg/µg
C3	1440	min/days
C4	1.0E-03	m^3/L
BW	58.0	kg
$AP_{(lifetime)}$	25,550	days
VR_{work}	60	L/min
AF	0.29	mg/cm^2
SA	3473	cm^2/day
$RCAF_{inh\text{-}gi}$	1.5	dimensionless
$RCAF_{inh}$	0.5	dimensionless
PM_{10}	60	$\mu g/m^3$

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Construction Worker - Soil: Table CW-3

Equations to Calculate Noncancer Risk for Construction Worker

Vlookup Version v0114

Noncancer Risk from Ingestion

$$HQ_{ing} = \frac{ADD_{ing}}{RfD_{oral\text{-}subchronic}}$$

$$ADD_{ing} = \frac{EPC * IR * RAF_{nc\text{-}ing} * EF * ED_{ing} * EP * C1}{BW * AP_{noncancer}}$$

Noncancer Risk from Dermal Absorption

$$HQ_{derm} = \frac{ADD_{derm}}{RfD_{oral\text{-}subchronic}}$$

$$ADD_{dermal} = \frac{EPC * SA * AF * RAF_{nc\text{-}derm} * EF * ED_{dermal} * EP * C1}{BW * AP_{noncancer}}$$

Noncancer Risk from Particulate Inhalation - Gastrointestinal Absorption

$$HQ_{inh\text{-}GI} = \frac{ADD_{inh\text{-}GI}}{RfD_{oral\text{-}subchronic}}$$

$$ADD_{inh\text{-}GI} = \frac{EPC * RCAF_{inh\text{-}gi} * PM_{10} * VR_{work} * RAF_{nc\text{-}ing} * EF * ED_{inh} * EP * C2 * C3 * C4}{BW * AP_{noncancer}}$$

Noncancer Risk from Particulate Inhalation - Pulmonary Absorption

$$HQ_{inh} = \frac{ADD}{RfD_{inhalation\text{-}subchronic}}$$

$$ADD_{inh} = \frac{EPC_{soil} * RCAF_{inh} * PM_{10} * VR_{work} * RAF_{nc\text{-}inh} * EF * ED_{inh} * EP * C2 * C3 * C4}{BW * AP_{noncancer}}$$

Parameter	Value	Units
RfD	OHM-specific	mg/kg-day
ADD	OHM-specific	mg/kg-day
EPC	OHM-specific	mg/kg
IR	100	mg/day
$RAF_{nc\text{-}ing}$	OHM-specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM-specific	dimensionless
$RAF_{nc\text{-}inh}$	OHM-specific	dimensionless
EF	0.143	event/day
$ED_{ing\ \&\ derm}$	1	day/event
ED_{inh}	0.333	day/event
EP	182	days
$C1$	1.0E-06	kg/mg
$C2$	1.0E-09	kg/µg
$C3$	1440	min/days
$C4$	1.0E-03	m^3/L
BW	58.0	kg
$AP_{noncancer}$	182	days
VR_{work}	60	L/min
AF	0.29	mg/cm^2
SA	3473	cm^2/day
$RCAF_{inh\text{-}gi}$	1.5	dimensionless
$RCAF_{inh}$	0.5	dimensionless
PM10	60	$µg/m^3$

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Construction Worker - Soil: Table CW-4
Definitions and Exposure Factors

Vlookup Version v0114

Parameter	Value	Units	Notes
ELCR - Excess Lifetime Cancer Risk	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
HI - Hazard Index	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal, inh=inhalation)
CSF - Cancer Slope Factor	chemical specific	$(mg/kg\text{-}day)^{-1}$	see Table CW-5.
RfD - Reference Dose	chemical specific	mg/kg-day	see Table CW-5.
LADD - Lifetime Average Daily Dose	chemical specific	mg/kg-day	Pathway specific. See Table CW-2.
ADD - Average Daily Dose	chemical specific	mg/kg-day	Pathway specific. See Table CW-3.
EPC - Exposure Point Concentration	chemical specific	mg/kg	see Table CW-1.
IR - Soil Ingestion Rate	100	mg/day	MADEP. 2002. Technical Update: Calculation of an Enhanced Soil Ingestion Rate. (http://www.mass.gov/dep/ors/orspubs.htm).
RAF_c - Relative Absorption Factor for Cancer Effects	chemical specific	dimensionless	Pathway specific - see Table CW-5.
RAF_{nc} - Relative Absorption Factor for Noncancer Effects	chemical specific	dimensionless	Pathway specific - see Table CW-5.
EF - Exposure Frequency	0.143	event/day	1 events (days) / 7 events (days) in a week; MADEP 1995 Guidance for Disposal Site Risk Characterization pg B-38.
$ED_{ing,derm}$ - Exposure Duration for ingestion or dermal exposure	1	day/event	
ED_{inh} - Exposure Duration for inhalation exposure	0.333	day/event	Represents 8 hours / event.
EP - Exposure Period	182	days	6 months; MADEP 1995 Guidance for Disposal Site Risk Characterization.
BW - Body Weight	58.0	kg	U.S. EPA. 1997. Exposure Factors Handbook. Table 7-7, Females, ages 18 - 25.
$AP_{(lifetime)}$ - Averaging Period for lifetime	25,550	days	Represents 70 years
$AP_{(noncancer)}$ - Averaging Period for noncancer	182	days	6 months; MADEP 1995 Guidance for Disposal Site Risk Characterization.
AF - Adherence Factor	0.29	mg/cm^2	MA DEP. 2002 Technical Update: Weighted Skin-Soil Adherence Factors. (http://www.mass.gov/dep/ors/orspubs.htm)
VR_{work} - Ventilation Rate during work (heavy exertion)	60	L/min	Table B-4 MADEP 1995 Guidance for Disposal Site Risk Characterization.
SA - Surface Area	3473	cm^2/day	MADEP. 1995. Guidance for Disposal Site Risk Characterization. 50th percentile for females. Appendix Table B-2.
$IFAF_{inh\text{-}gi}$ - Ingestion Fraction Adjustment Factor, gastrointestinal	1.5	dimensionless	MADEP 2007. Characterization of Risks Due to Inhalation of Particulates by Construction Workers
$IFAF_{inh}$ - Inhalation Fraction Adjustment Factor, inhalation	0.5	dimensionless	MADEP 2002. Characterization of Risks Due to Inhalation of Particulates by Construction Workers
PM10 - Concentration of PM_{10}	60	$\mu g/m^3$	MADEP 1995 Guidance for Disposal Site Risk Characterization pg B-11

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Construction Worker - Soil: Table CW-5
Chemical-Specific Data

Vlookup Version v0114

Oil or Hazardous Material	Oral CSF $(mg/kg\text{-}day)^{-1}$	$RAF_{c\text{-}ing}$	$RAF_{c\text{-}derm}$	$RAF_{c\text{-}inh}$	Inhalation CSF $(mg/kg\text{-}day)^{-1}$	Subchronic Oral RfD mg/kg-day	Subchronic $RAF_{nc\text{-}ing}$	Subchronic $RAF_{nc\text{-}derm}$	Subchronic $RAF_{nc\text{-}inh}$	Subchronic Inhalation RfD
AROMATICS C9 to C10						3.0E-01	1	0.2	1	1.4E-01
ALIPHATICS C9 to C12						1.0E+00	1	0.2	1	1.7E-01
AROMATICS C9 to C10						3.0E-01	1	0.2	1	1.4E-01
Ethylbenzene						5.0E-02	1	0.03	1	2.6E+00
Naphthalene						2.0E-01	0.3	0.1	1	8.6E-04
Toluene						8.0E-01	1	0.03	1	1.4E+00
XYLENES (Mixed Isomers)						4.0E-01	1	0.03	1	1.1E-01
ALIPHATICS C9 to C18						1.0E+00	1	0.2	1	1.7E-01
ALIPHATICS C19 to C36						6.0E+00	1	0.2		
AROMATICS C11 to C22						3.0E-01	0.3	0.1	1	1.4E-01
Acenaphthene						2.0E-01	0.3	0.1	1	1.4E-01
Acenaphthylene						3.0E-01	0.3	0.1	1	1.4E-01
Anthracene						1.0E+00	0.3	0.1	1	1.4E-01
Benzo(a)anthracene	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
Benzo(a)pyrene	7.3E+00	0.3	0.02	1	7.3E+00	3.0E-01	0.3	0.02	1	1.4E-01
Benzo(b)fluoranthene	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
Benzo(g,h,i)perylene						3.0E-01	0.3	0.1	1	1.4E-01
Benzo(k)fluoranthene	7.3E-02	0.3	0.02	1	7.3E-02	3.0E-01	0.3	0.02	1	1.4E-01
Chrysene	7.3E-02	0.3	0.02	1	7.3E-02	3.0E-01	0.3	0.02	1	1.4E-01
DIBENZO(a,h)ANTHRACENE	7.3E+00	0.3	0.02	1	7.3E+00	3.0E-01	0.3	0.02	1	1.4E-01
Fluoranthene						1.0E-01	0.3	0.1	1	1.4E-01
Fluorene						4.0E-01	0.3	0.1	1	1.4E-01
Indeno(1,2,3-cd)pyrene	7.3E-01	0.3	0.02	1	7.3E-01	3.0E-01	0.3	0.02	1	1.4E-01
METHYLNAPHTHALENE, 2-						4.0E-03	0.3	0.1	1	1.4E-01
Phenanthrene						3.0E-01	0.3	0.1	1	1.4E-01
Pyrene						3.0E-01	0.3	0.1	1	1.4E-01
POLYCHLORINATED BIPHENYLS (PCBs)	2.0E+00	1	0.1	1	3.5E-01	5.0E-05	1	0.1	1	5.7E-06
TCDD, 2,3,7,8- (equivalents)	1.5E+05	1	0.1	1	1.2E+05	7.0E-10	1	0.1	1	5.7E-10
Arsenic	1.5E+00	0.5	0.03	1	1.1E+01	3.0E-04	0.5	0.03	1	5.7E-06
Barium						7.0E-02	1	0.1	1	1.4E-03
Beryllium					8.4E+00	5.0E-03	1	0.1	1	5.7E-06
Cadmium					6.3E+00	5.0E-04	0.5	0.01	1	5.7E-06
CHROMIUM(III)						1.5E+00	1	0.1	1	8.6E-05
Lead						7.5E-04	0.5	0.006	1	2.9E-04
Mercury						3.0E-04	0.5	0.1	1	8.6E-05
Nickel					1.7E+00	2.0E-02	1	0.2	1	2.9E-04
Silver						5.0E-03	1	0.3	1	4.0E-05
Vanadium						9.0E-03	1	0.1	1	2.9E-04
Zinc						3.0E-01	1	0.1	1	4.0E-04

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Construction Worker - Soil: Table CW-6
Cyanide Calculations

The acute concentration of available cyanide in soil is the level at or below which adverse human health effects would not be expected following an acute exposure. For construction workers, the subchronic concentrations calculated in the EPCs tab are more conservative than the acute concentrations. The acute calculation is below.

Acute Concentration Calculation for Cyanide

$$\text{Concentration} = \frac{\text{HQ x Acute Dose Limit x BW}}{\text{IR x RAF x Conversion Factor}}$$

Parameter	Value	Units
HQ (Hazard Quotient)	1	(unitless)
Acute Dose Limit	0.01	mg CN/ kg BW
BW (Body Weight) 11-12	58	kg
IR (1-time reasonable max)	Site-specific	mg
Conversion Factor	1.0E-06	kg soil / mg soil
RAF	1	(unitless)

The toxicological basis for estimating an allowable one-time dose is documented in MassDEP's 1992 *Background Documentation for the Development of an "Available Cyanide" Benchmark Concentration,* which is published at: http://www.mass.gov/eea/docs/dep/toxics/stypes/dscyanide.pdf

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ATTACHMENT 5

COMPARISON OF NEMASKET STREET LOTS AND KEITH MIDDLE SCHOOL SOIL DATA TO MCP UCLs

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3	IW-1	IW-2	RS-1	RS-2	RS-3	RS-4	Bethel-1			Bethel-2			Bethel-3			
		Sample Depth (ft.):					0-0.5	0-0.5	1-4	0.5-4	0.5-4	0.5-4	1-3	3-7	7-8.5	0.5-3	3-7	7-10	0-1	0.5-3	0-1	1-3
		Sample Date:					12/23/2004	12/23/2004	10/22/2004	10/22/2004	10/22/2004	10/22/2004 combo	8/23/2005	8/23/2005	8/23/2005	8/23/2005	8/23/2005 combo	8/23/2005	9/8/2005	8/23/2005	06/10/2011	06/10/2011
VOCs																						
(mg/kg)	n-Butylbenzene		100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	sec-Butylbenzene		100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Isopropylbenzene (Cumene)		100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)		100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene		100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene		10	30	10	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene		100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,3,5-Trimethylbenzene		100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																						
(mg/kg)	C9-C12 Aliphatics		1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics		100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene		500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene		40	500	40	1,000	0.088 U	0.11 U	NA	NA	NA	NA	**1.6**	**0.12**	NA	**12**	**7.0**	NA	NA	**1.0**	NA	NA
	Toluene		500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes		300	500	300	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																						
(mg/kg)	C9-C18 Aliphatics		1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics		3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics		1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																						
(mg/kg)	Phenol		50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol		NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol		200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	**0.075**	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol		100	500	100	1,000	NA	NA	NA	NA	NA	NA	1.1 U	NA	NA	**0.26 J**	8.45 U	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene		2	2	10	10	NA	NA	NA	NA	NA	NA	1.1 U	NA	NA	NA	2.05 U	NA	NA	NA	NA	NA
	Di-n-butylphthalate		NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	**3.3**	NA	NA	NA	NA	NA	NA	**6.0**	NA	NA
	Butyl benzyl phthalate		NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.067**	NA	NA
	bis(2-Ethylhexyl)phthalate		200	200	700	700	NA	NA	NA	NA	NA	NA	NA	**3.7**	NA	NA	NA	NA	NA	**3.4**	NA	NA
	Dibenzofuran		10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	**2.4**	**0.15**	NA	**14**	**9.7**	NA	NA	**1.0**	NA	NA
	Acenaphthene		1,000	1,000	3,000	3,000	**0.11**	**0.14**	NA	NA	NA	NA	**4.2**	**0.30**	NA	**28**	**18**	NA	NA	**1.4**	NA	NA
	Acenaphthylene		600	10	600	10	0.088 U	0.11 U	NA	NA	NA	NA	**0.11**	NA	**0.11**	NA	**1.4**	**13**	NA	**0.091**	NA	NA
	Anthracene		1,000	1,000	3,000	3,000	**0.25**	**0.44**	NA	NA	NA	NA	**8.8**	**0.80**	**1.5**	**50**	**28**	**18**	NA	**3.4**	NA	NA
	Benzo(a)anthracene		7	7	40	40	**0.92**	**1.4**	NA	NA	NA	NA	**20**	**3.8**	**3.7**	**120**	**68**	**50**	NA	**7.6**	NA	NA
	Benzo(a)pyrene		2	2	4	4	**0.93**	**1.4**	NA	NA	NA	NA	**16**	**3.7**	**2.7**	**93**	**55**	**33**	NA	**5.0**	NA	NA
	Benzo(b)fluoranthene		7	7	40	40	**1.4**	**2.3**	NA	NA	NA	NA	**24**	**4.5**	**3.9**	**130**	**91**	**40**	NA	**9.8**	NA	NA
	Benzo(g,h,i)perylene		1,000	1,000	3,000	3,000	**0.49**	**0.82**	NA	NA	NA	NA	**6.2**	**2.0**	**0.85**	**39**	**30**	NA	NA	**3.0**	NA	NA
	Benzo(k)fluoranthene		70	70	400	400	**0.45**	**0.56**	NA	NA	NA	NA	**8.4**	**1.5**	**1.3**	**39**	**28**	NA	NA	**2.3**	NA	NA
	Chrysene		70	70	400	400	**8.8**	**1.0**	NA	NA	NA	NA	**17**	**3.1**	**2.9**	**98**	**54**	**49**	NA	**6.1**	NA	NA
	Dibenz(a,h)anthracene		0.7	0.7	4	4	0.088 U	0.11 U	NA	NA	NA	NA	**2.5**	**0.85**	0.72 U	NA	**13**	NA	NA	**1.2**	NA	NA
	Fluoranthene		1,000	1,000	3,000	3,000	**2.2**	**3.0**	NA	NA	NA	NA	**5.1**	**3.2**	NA	**280**	**170**	**70**	NA	**6.3**	NA	NA
	Fluorene		1,000	1,000	3,000	3,000	**0.089**	**0.14**	NA	NA	NA	NA	**4.2**	**0.33**	NA	**25**	**16**	NA	NA	**1.5**	NA	NA
	Indeno(1,2,3-cd)pyrene		7	7	40	40	**0.55**	**0.78**	NA	NA	NA	NA	**7.4**	**2.3**	**1.1**	**46**	**35**	NA	NA	**3.2**	NA	NA
	2-Methylnaphthalene		80	300	80	500	0.088 U	0.11 U	NA	NA	NA	NA	**0.87**	**0.089**	NA	NA	**4.0**	NA	NA	**0.55**	NA	NA
	Phenanthrene		500	500	1,000	1,000	**1.4**	**1.9**	NA	NA	NA	NA	**41**	**3.2**	**7.6**	**220**	**130**	**72**	NA	**15**	NA	NA
	Pyrene		1,000	1,000	3,000	3,000	**1.6**	0.11 U	NA	NA	NA	NA	**34**	**9.6**	**7.8**	**180**	**140**	**78**	NA	**13**	NA	NA
	3-Methylcholanthrene		NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole		NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene		NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																						
(mg/kg)	Total PCBs		1	1	4	4	**0.27**	**5.71**	**2.07**	**4.22**	**7.31**	**7.93**	**8.141**	**95.295**	**13.308**	**2.706**	**7.034**	**0.656**	**3.815**	**61.83**	**22.3**	**22.7**
TEQ Summation^																						
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)		2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3.4E-04**	**1.7E-04**
Metals, total																						
(mg/kg)	Antimony		20	20	30	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic		20	20	20	20	**1.81**	**6.38**	NA	NA	NA	NA	**5**	**17**	**17**	**14**	**9.5**	**7**	NA	**13**	NA	NA
	Barium		1,000	1,000	3,000	3,000	**19**	**584**	NA	NA	NA	NA	**536**	**1,850**	**2,950**	**972**	**735.5**	**947**	NA	**1,010**	NA	NA
	Beryllium		90	90	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium		70	70	100	100	**0.81**	**3.77**	NA	NA	NA	NA	**3**	**11**	**10**	**7**	**6**	**3**	NA	**6**	NA	NA
	Chromium (III)		1,000	1,000	3,000	3,000	**7.14**	**57**	NA	NA	NA	NA	**43**	**104**	**133**	**82**	**55.5**	**270**	NA	**195**	NA	NA
	Chromium (VI)		100	100	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead		200	200	600	600	**44**	**560**	NA	NA	NA	NA	**302**	**1,220**	**1,600**	**1,370**	**4,700**	**345**	NA	**645**	NA	NA
	Mercury		20	20	30	30	**0.063**	**0.835**	NA	NA	NA	NA	**0.62**	**1.15**	**2.01**	**1.04**	**0.747**	**0.14**	NA	**0.931**	NA	NA
	Nickel		600	600	1000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium		400	400	700	700	0.12 U	0.15 U	NA	NA	NA	NA	NA	NA	NA	NA	**1.10**	**0.74**	NA	NA	NA	NA
	Silver		100	100	200	200	0.06 U	**0.38**	NA	NA	NA	NA	NA	NA	NA	NA	**0.37**	NA	NA	NA	NA	NA
	Vanadium		400	400	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc		1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	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.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				Bethel-4		NM-ROW-1			NM-ROW-2				NM-ROW-3				NM-ROW-4				RG-ROW-1		
		Sample Depth (ft.):				0-1	0.25-3	0-1	1-3	5-7	0-1	1-3	5-7	7.5-8	0-1	1-3	5-7	8.5-10	0-1	1-3	5-7	8-10	0-1	1-3	5-7
		Sample Date:				9/8/2005	8/23/2005	3/24/2011	3/24/2011	3/24/2011 combo	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																				
VOCs																									
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10	30	10	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																									
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	40	500	40	1,000	NA	**4.2**	0.19 U	0.38 U	0.22 U	0.38 U	**11**	**0.43**	0.59 U	0.43 U	0.20 U	**36**	0.77 U	0.18 U	0.40 U	1.8 U	0.45 U	0.44 U	0.77 U	0.47 U
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	300	500	300	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																									
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																									
(mg/kg)	Phenol	50	20	50	20	NA	**0.42**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	NA	**0.19**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol	200*	5*	NS	NS	NA	**0.70**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	**0.63**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	**0.73**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	**1.3**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	NA	**5.4**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	NA	**4.8**	0.19 U	0.38 U	0.22 U	**0.77**	**2.6**	0.22 U	0.59 U	0.43 U	0.20 U	**8.1**	0.77 U	**0.37**	0.40 U	1.8 U	0.45 U	0.44 U	0.77 U	0.47 U
	Acenaphthylene	600	10	600	10	NA	**2.2**	0.19 U	0.38 U	0.22 U	0.38 U	**4.4**	0.22 U	0.59 U	0.43 U	0.20 U	**1.7**	0.77 U	0.18 U	0.40 U	1.8 U	0.45 U	0.44 U	0.77 U	0.47 U
	Anthracene	1,000	1,000	3,000	3,000	NA	**18**	0.19 U	**0.98**	0.22 U	**1.6**	**9.6**	**0.68**	0.59 U	**0.71**	0.20 U	**21**	0.77 U	**0.67**	**1.1**	**7.7**	0.45 U	0.44 U	**1.7**	**1.1**
	Benzo(a)anthracene	7	7	40	40	NA	**30**	0.19 U	**3.1**	**0.83**	**3.9**	**15**	**1.4**	0.59 U	**2.2**	**0.45**	**20**	0.77 U	**2.4**	**3.6**	**12**	0.45 U	**1.5**	**3.9**	**4.6**
	Benzo(a)pyrene	2	2	4	4	NA	**22**	0.19 U	**2.9**	**1.2**	**3.6**	**14**	**1.3**	0.59 U	**1.9**	**0.46**	**17**	0.77 U	**2.2**	**3.0**	**8.9**	0.45 U	**1.5**	**4.1**	**5.1**
	Benzo(b)fluoranthene	7	7	40	40	NA	**32**	0.19 U	**3.5**	**1.9**	**4.6**	**17**	**1.5**	0.59 U	**2.6**	**0.56**	**20**	0.77 U	**2.8**	**3.3**	**10**	0.45 U	**1.8**	**5.1**	**6.5**
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	NA	**6.6**	0.19 U	**1.6**	**0.58**	**1.8**	**5.2**	**0.57**	0.59 U	**0.84**	**0.40**	**6.0**	0.77 U	**1.6**	**1.9**	**4.6**	0.45 U	**0.80**	**2.5**	**2.0**
	Benzo(k)fluoranthene	70	70	400	400	NA	**0.66**	0.19 U	**1.5**	**0.4025 J**	**1.8**	**7.0**	**0.61**	0.59 U	**1.0**	**0.25**	**7.1**	0.77 U	**1.1**	**1.2**	**4.4**	0.45 U	**0.63**	**1.9**	**2.6**
	Chrysene	70	70	400	400	NA	**23**	0.19 U	**3.3**	**1**	**3.9**	**14**	**1.4**	0.59 U	**2.2**	**0.49**	**18**	0.77 U	**2.6**	**3.7**	**11**	0.45 U	**1.6**	**4.2**	**4.8**
	Dibenz(a,h)anthracene	0.7	0.7	4	4	NA	**2.9**	0.19 U	0.38 U	**0.1825 J**	**0.43**	2.0 U	0.22 U	0.59 U	0.43 U	0.20 U	**1.7**	0.77 U	**0.44**	**0.56**	1.8 U	0.45 U	0.44 U	0.77 U	**0.66**
	Fluoranthene	1,000	1,000	3,000	3,000	NA	**67**	**0.19**	**5.2**	**0.97**	**7.4**	**30**	**2.5**	0.59 U	**3.8**	**0.88**	**50**	0.77 U	**2.8**	**5.2**	**25**	0.45 U	**1.5**	**5.2**	**5.8**
	Fluorene	1,000	1,000	3,000	3,000	NA	NA	0.19 U	**0.41**	0.22 U	**0.70**	**6.1**	**0.33**	0.59 U	0.43 U	0.20 U	**13**	0.77 U	**0.38**	**0.56**	**2.8**	0.45 U	0.44 U	**0.89**	**0.48**
	Indeno(1,2,3-cd)pyrene	7	7	40	40	NA	**8.0**	0.19 U	**1.8**	**0.84**	**2.1**	**6.5**	**0.69**	0.59 U	**0.99**	**0.41**	**7.6**	0.77 U	**1.7**	**2.1**	**5.7**	0.45 U	**0.88**	**2.3**	**2.5**
	2-Methylnaphthalene	80	300	80	500	NA	**3.1**	0.19 U	0.38 U	0.22 U	0.38 U	**4.7**	0.22 U	0.59 U	0.43 U	0.20 U	**9.0**	0.77 U	0.18 U	0.40 U	1.8 U	0.45 U	0.44 U	0.77 U	0.47 U
	Phenanthrene	500	500	1,000	1,000	NA	**63**	0.19 U	**4.3**	**0.465**	**6.6**	**41**	**2.7**	0.59 U	**3.6**	**0.43**	**77**	0.77 U	**3.7**	**5.5**	**24**	0.45 U	**1.3**	**6.8**	**4.8**
	Pyrene	1,000	1,000	3,000	3,000	NA	**47**	0.19 U	**4.8**	**0.66**	**4.9**	**22**	**1.9**	0.59 U	**2.8**	**0.86**	**45**	0.77 U	**2.5**	**6.2**	**19**	0.45 U	**2.1**	**5.3**	**5.7**
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																									
(mg/kg)	Total PCBs	1	1	4	4	**1.846**	**619.04**	**1.54 J**	**17.0 J**	**1.239 J**	**3.83 J**	**23.9 J**	**0.806 J**	0.173 UJ	**3.82 J**	**0.399 J**	**0.832 J**	**1.013 J**	**0.767 J**	**61.9 J**	**62.3 J**	**1.912 J**	**7.61 J**	**1.568 J**	**3.40 J**
TEQ Summation^																									
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																									
(mg/kg)	Antimony	20	20	30	30	NA	NA	2.8 U	2.8 U	3.25 U	2.8 U	2.9 U	3.2 U	8.6 U	3.1 U	2.8 U	3.4 U	12 U	2.6 U	2.9 U	3.4 U	6.6 U	3.2 U	2.9 U	3.5 U
	Arsenic	20	20	20	20	NA	**33**	2.8 U	**29**	**15.5**	**3.4**	**7.4**	**17**	8.6 U	**3.5**	2.8 U	**12**	12 U	2.6 U	**6.2**	**15**	6.6 U	**11**	**15**	**13**
	Barium	1,000	1,000	3,000	3,000	NA	**4,690**	**40**	**710**	**450**	**440**	**780**	**380**	**190**	**440**	**63**	**730**	**130**	**30**	**380**	**2,000**	**69**	**610**	**750**	**290**
	Beryllium	90	90	200	200	NA	NA	0.28 U	0.28 U	0.325 U	0.28 U	0.29 U	0.32 U	0.86 U	0.31 U	0.28 U	0.34 U	1.2 U	0.26 U	0.29 U	**0.45**	0.66 U	0.32 U	0.29 U	0.35 U
	Cadmium	70	70	100	100	NA	**43**	0.28 U	**3.4**	**9.4**	**1.4**	**2.1**	**2.5**	**1.1**	**1.3**	0.28 U	**1.9**	1.2 U	0.26 U	**1.3**	**7.1**	0.66 U	**2.2**	**3.5**	**1.4**
	Chromium (III)	1,000	1,000	3,000	3,000	NA	**296**	**9.1**	**65**	**26**	**80**	**81**	**44**	**11**	**110**	**20**	**140**	**14**	**5.0**	**32**	**370**	**10**	**33**	**52**	**32**
	Chromium (VI)	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	200	200	600	600	NA	**1,920**	**100**	**860**	**760**	**370**	**1,100**	**2,000**	**340**	**370**	**380**	**420**	**83**	**83**	**610**	**2,000**	**35**	**740**	**1,000**	**470**
	Mercury	20	20	30	30	NA	**1.93**	**0.076**	**1.6**	**0.74**	**0.25**	**1.1**	**1.5**	**0.18**	**0.73**	**0.12**	**0.32**	0.11 U	**0.16**	**0.73**	**1.0**	0.066 U	**0.90**	**0.53**	**3.2**
	Nickel	600	600	1000	1000	NA	NA	**5.3**	**28**	**34.5**	**12**	**27**	**65**	**20**	**26**	**12**	**41**	**11**	**2.8**	**14**	**57**	**3.7**	**19**	**31**	**23**
	Selenium	400	400	700	700	NA	NA	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	6.4 U	5.7 U	6.9 U
	Silver	100	100	200	200	NA	NA	0.55 U	0.56 U	0.655 U	0.56 U	0.59 U	3.2 U	1.7 U	0.62 U	0.57 U	0.67 U	2.3 U	0.52 U	0.58 U	0.68 U	1.3 U	0.64 U	0.57 U	0.69 U
	Vanadium	400	400	700	700	NA	NA	**13**	**46**	**24.5**	**67**	**60**	**44**	**18**	**63**	**19**	**85**	**17**	**8.8**	**28**	**210**	**15**	**30**	**49**	**36**
	Zinc	1,000	1,000	3,000	3,000	NA	NA	**40**	**500**	**570**	**240**	**550**	**1,000**	**250**	**250**	**44**	**640**	**90**	**46**	**330**	**880**	**24**	**510**	**1,100**	**320**

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				RG-ROW-2			RG-ROW-3			SB-NM-1					SB-NM-2				SB-NM-3			
		Sample Depth (ft.):				0-1	1-3	3-5	0-1	1-3	5-7	0-1	1-3	5-7	12-13	13-15	0-1	1-3	5-7	11-13	0-1	1-3	5-7	12-13
		Sample Date:				4/1/2011	4/1/2011 combo	4/1/2011	4/1/2011	4/1/2011	4/1/2011	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																			
VOCs																								
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10	30	10	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																								
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	40	500	40	1,000	**1.2**	**0.775**	**0.25**	0.19 U	**1.2**	**1.3**	0.23 U	0.21 U	0.20 U	0.29 U	NA	0.23 U	0.40 U	0.98 U	0.68 U	0.21 U	0.83 U	**2.0**	0.42 U
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	300	500	300	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																								
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																								
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	**3.3**	**2.2**	**1.3**	0.19 U	**5.4**	**2.3**	0.23 U	0.21 U	0.20 U	0.29 U	NA	0.23 U	0.40 U	0.98 U	0.68 U	0.21 U	0.83 U	**1.8**	0.42 U
	Acenaphthylene	600	10	600	10	0.43 U	**3.1**	**0.50**	0.19 U	0.45 U	0.91 U	0.23 U	0.21 U	0.20 U	0.29 U	NA	0.23 U	0.40 U	0.98 U	0.68 U	0.21 U	0.83 U	0.90 U	0.42 U
	Anthracene	1,000	1,000	3,000	3,000	**5.3**	**16**	**8.6**	0.19 U	**11**	**5.1**	**0.49**	**0.23**	0.20 U	0.29 U	NA	**0.31**	**0.43**	**1.3**	0.68 U	**0.24**	0.83 U	**4.0**	0.42 U
	Benzo(a)anthracene	7	7	40	40	**13**	**23**	**8.3**	**0.47**	**29**	**12**	**1.2**	**0.72**	**0.22**	0.29 U	NA	**0.91**	**1.2**	**3.0**	0.68 U	**0.66**	**1.1**	**5.8**	0.42 U
	Benzo(a)pyrene	2	2	4	4	**11**	**18.5**	**6.4**	**0.51**	**27**	**11**	**1.1**	**0.66**	**0.25**	0.29 U	NA	**0.86**	**1.2**	**2.6**	0.68 U	**0.67**	**0.98**	**5.0**	0.42 U
	Benzo(b)fluoranthene	7	7	40	40	**14**	**21.5**	**7.8**	**0.76**	**35**	**14**	**1.6**	**0.91**	**0.32**	0.29 U	NA	**1.2**	**1.8**	**3.5**	0.68 U	**1.0**	**1.3**	**5.7**	0.42 U
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**4.3**	**5.4**	**1.9**	0.19 U	**9.2**	**5.3**	**0.46**	**0.28**	0.20 U	0.29 U	NA	**0.28**	**0.49**	**1.2**	0.68 U	**0.23**	0.83 U	**2.4**	0.42 U
	Benzo(k)fluoranthene	70	70	400	400	**6.6**	**9.65**	**3.2**	**0.30**	**13**	**5.3**	**0.57**	**0.35**	0.20 U	0.29 U	NA	**0.48**	**0.66**	**1.3**	0.68 U	**0.35**	0.83 U	**2.2**	0.42 U
	Chrysene	70	70	400	400	**12**	**21**	**7.3**	**0.48**	**29**	**12**	**1.3**	**0.70**	**0.25**	0.29 U	NA	**0.96**	**1.2**	**2.9**	0.68 U	**0.68**	**1.1**	**5.8**	0.42 U
	Dibenz(a,h)anthracene	0.7	0.7	4	4	**1.3**	**1.65**	**0.59**	0.19 U	**2.5**	**1.5**	0.23 U	0.21 U	0.20 U	0.29 U	NA	0.23 U	0.40 U	0.98 U	0.68 U	0.21 U	0.83 U	0.90 U	0.42 U
	Fluoranthene	1,000	1,000	3,000	3,000	**29**	**64**	**25**	**1.1**	**80**	**29**	**1.9**	**1.0**	**0.30**	0.29 U	NA	**1.5**	**2.3**	**5.5**	0.68 U	**1.1**	**1.9**	**9.8**	0.42 U
	Fluorene	1,000	1,000	3,000	3,000	**2.7**	**4.3**	**2.2**	0.19 U	**4.5**	**2.7**	0.23 U	0.21 U	0.20 U	0.29 U	NA	0.23 U	0.40 U	0.98 U	0.68 U	0.21 U	0.83 U	**2.4**	0.42 U
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**5.5**	**7.35**	**2.6**	**0.21**	**19**	**6.6**	**0.63**	**0.37**	0.20 U	0.29 U	NA	**0.39**	**0.64**	**1.7**	0.68 U	**0.30**	0.83 U	**3.3**	0.42 U
	2-Methylnaphthalene	80	300	80	500	**0.86**	**1**	**0.49**	0.19 U	**0.96**	0.91 U	0.23 U	0.21 U	0.20 U	0.29 U	NA	0.23 U	0.40 U	0.98 U	0.68 U	0.21 U	0.83 U	**1.2**	0.42 U
	Phenanthrene	500	500	1,000	1,000	**20**	**64**	**31**	**0.60**	**53**	**22**	**2.0**	**0.88**	0.20 U	0.29 U	NA	**1.5**	**1.8**	**5.0**	0.68 U	**1.1**	**1.8**	**14**	**0.47**
	Pyrene	1,000	1,000	3,000	3,000	**21**	**43.5**	**16**	**0.57**	**51**	**18**	**1.8**	**1.1**	**0.33**	0.29 U	NA	**1.3**	**1.5**	**4.6**	0.68 U	**0.67**	**1.7**	**10**	**0.56**
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																								
(mg/kg)	Total PCBs	1	1	4	4	**11.61 J**	**4.097 J**	**0.108 J**	**0.196 J**	**9.96 J**	**28.52 J**	**41.33 J**	**6.72 J**	**3.88 J**	**17.6 J**	**49.2 J**	**31.54 J**	**23.57 J**	**177 J**	**0.298 J**	**31.46 J**	**49.52 J**	**736.4 J**	**12.25 J**
TEQ Summation^																								
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																								
(mg/kg)	Antimony	20	20	30	30	3.2 U	3 U	2.7 U	3.0 U	3.2 U	3.1 U	3.3 U	3.1 U	2.9 U	4.2 U	NA	3.4 U	2.9 U	3.5 U	9.9 U	2.9 U	3.1 U	**69**	6.0 U
	Arsenic	20	20	20	20	**15**	**4.075 J**	2.6 U	3.0 U	3.2 U	**9.4**	**7.6**	**4.0**	**12**	**8.5**	NA	**8.3**	**8.4**	**4.4**	9.9 U	**6.0**	**12**	**28**	**8.6**
	Barium	1,000	1,000	3,000	3,000	**950**	**540**	**98**	**39**	**240**	**530**	**1,300**	**620**	**480**	**700**	NA	**1,500**	**1,600**	**790**	**62**	**1,300**	**2,000**	**2,800**	**1,700**
	Beryllium	90	90	200	200	0.32 U	0.3 U	0.26 U	0.30 U	0.32 U	0.31 U	0.33 U	0.31 U	**0.44**	0.42 U	NA	0.34 U	0.29 U	0.35 U	0.99 U	0.29 U	**0.47**	**0.91**	0.60 U
	Cadmium	70	70	100	100	**3.1**	**1.0725 J**	**0.31**	0.30 U	**0.69**	**2.1**	**3.8**	**1.5**	**1.7**	**6.1**	**4.0**	**3.6**	**4.8**	**5.7**	0.99 U	**3.4**	**4.3**	**9.3**	**2.1**
	Chromium (III)	1,000	1,000	3,000	3,000	**140**	**38**	**8.1**	**15**	**55**	**44**	**150**	**44**	**28**	**73**	**45**	**120**	**140**	**54**	**20**	**100**	**170**	**360**	**170**
	Chromium (VI)	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	200	200	600	600	**740**	**1,000**	**110**	**36**	**320**	**710**	**690**	**330**	**630**	**610**	**310**	**1,600**	**1,300**	**350**	**77**	**680**	**1,200**	**2,600**	**390**
	Mercury	20	20	30	30	**1.8**	**0.815**	**0.10**	**0.042**	**0.42**	**0.99**	**0.96**	**0.35**	**1.8**	**0.24**	NA	**1.1**	**0.92**	**2.2**	**0.033**	0.010 U	**0.90**	**1.9**	**0.14**
	Nickel	600	600	1000	1000	**41**	**16**	**3.8**	**8.8**	**55**	**34**	**31**	**42**	**16**	**30**	**17**	**47**	**34**	**23**	**17**	**25**	**44**	**77**	**31**
	Selenium	400	400	700	700	6.5 U	5.95 U	5.3 U	6.0 U	6.4 U	6.3 U	6.7 U	6.1 U	5.8 U	8.4 U	NA	6.9 U	5.9 U	7.0 U	20 U	5.8 U	61 U	67 U	12 U
	Silver	100	100	200	200	0.65 U	0.595 U	0.53 U	0.60 U	0.64 U	0.63 U	0.67 U	0.61 U	0.58 U	0.84 U	NA	0.69 U	5.9 U	0.70 U	2.0 U	0.58 U	6.1 U	6.7 U	1.2 U
	Vanadium	400	400	700	700	**83**	**26**	**11**	**15**	**37**	**32**	**99**	**29**	**41**	**28**	NA	**84**	**170**	**39**	**19**	**85**	**99**	**190**	**85**
	Zinc	1,000	1,000	3,000	3,000	**780**	**380**	**64**	**40**	**310**	**510**	**500**	**290**	**420**	**460**	NA	**900**	**710**	**490**	**68**	**460**	**840**	**1,500**	**440**

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-4					SB-NM-5				SB-NM-6				SB-NM-6	
		Sample Depth (ft.):				0-1	1-3	1-3	5-7	11-13	0-1	1-3	7-9	12-14	0-1	1-3	1-3	5-7	0-1	1-3
		Sample Date:				12/14/10	12/14/10	6/8/2011 combo	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	12/14/10	6/8/2011	12/14/10	06/08/2011	06/08/2011
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3															
VOCs																				
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10	30	10	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																				
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	40	500	40	1,000	0.22 U	0.21 U	NA	0.26 U	0.58 U	**0.90**	0.21 U	**4.5**	**3.8**	0.21 U	**0.81**	NA	0.44 U	NA	NA
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	300	500	300	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																				
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																				
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	0.22 U	0.21 U	NA	0.26 U	0.58 U	**1.3**	0.21 U	**2.4**	2.4 U	0.21 U	**1.0**	NA	0.44 U	NA	NA
	Acenaphthylene	600	10	600	10	0.22 U	0.21 U	NA	0.26 U	0.58 U	0.47 U	0.21 U	**6.5**	**5.1**	0.21 U	0.42 U	NA	**0.83**	NA	NA
	Anthracene	1,000	1,000	3,000	3,000	**0.45**	0.21 U	NA	0.26 U	0.58 U	**2.0**	0.21 U	**11**	**9.4**	**0.49**	**2.2**	NA	**2.4**	NA	NA
	Benzo(a)anthracene	7	7	40	40	**1.1**	**0.51**	NA	**0.59**	0.58 U	**3.3**	0.21 U	**16**	**14**	**1.3**	**4.9**	NA	**5.8**	NA	NA
	Benzo(a)pyrene	2	2	4	4	**0.98**	**0.50**	NA	**0.59**	0.58 U	**2.6**	**0.61**	**14**	**12**	**1.1**	**4.1**	NA	**5.0**	NA	NA
	Benzo(b)fluoranthene	7	7	40	40	**1.3**	**0.67**	NA	**0.82**	0.58 U	**3.7**	**0.52**	**17**	**16**	**1.5**	**5.0**	NA	**5.6**	NA	NA
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**0.51**	**0.25**	NA	**0.28**	0.58 U	**0.80**	**1.1**	**7.4**	**5.1**	**0.56**	**3.4**	NA	**3.5**	NA	NA
	Benzo(k)fluoranthene	70	70	400	400	**0.46**	**0.24**	NA	**0.31**	0.58 U	**0.53**	**0.23**	**4.3**	**5.1**	**0.53**	**1.8**	NA	**2.0**	NA	NA
	Chrysene	70	70	400	400	**1.1**	**0.54**	NA	**0.63**	0.58 U	**3.4**	**0.23**	**15**	**13**	**1.3**	**4.8**	NA	**5.5**	NA	NA
	Dibenz(a,h)anthracene	0.7	0.7	4	4	0.22 U	0.21 U	NA	0.26 U	0.58 U	0.47 U	0.21 U	**2.3**	2.4 U	0.21 U	**1.0**	NA	**1.0**	NA	NA
	Fluoranthene	1,000	1,000	3,000	3,000	**1.8**	**0.74**	NA	**0.81**	0.58 U	**6.0**	**0.25**	**38**	**32**	**2.5**	**9.2**	NA	**11**	NA	NA
	Fluorene	1,000	1,000	3,000	3,000	0.22 U	0.21 U	NA	0.26 U	0.58 U	**1.2**	0.21 U	**6.9**	**5.2**	0.21 U	**1.1**	NA	**0.99**	NA	NA
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**0.68**	**0.29**	NA	**0.34**	0.58 U	**1.2**	**1.1**	**8.5**	**7.2**	**0.69**	**4.2**	NA	**4.7**	NA	NA
	2-Methylnaphthalene	80	300	80	500	0.22 U	0.21 U	NA	0.26 U	0.58 U	**0.57**	0.21 U	**4.1**	**3.4**	0.21 U	**0.43**	NA	0.44 U	NA	NA
	Phenanthrene	500	500	1,000	1,000	**1.8**	**0.73**	NA	**0.68**	0.58 U	**10**	**0.22**	**49**	**42**	**2.2**	**8.3**	NA	**9.6**	NA	NA
	Pyrene	1,000	1,000	3,000	3,000	**1.7**	**0.74**	NA	**0.77**	0.58 U	**4.7**	**0.28**	**29**	**23**	**2.1**	**9.6**	NA	**12**	NA	NA
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																				
(mg/kg)	Total PCBs	1	1	4	4	**49.66 J**	**45.58 J**	NA	**7.73 J**	0.176 UJ	**13.59 J**	**3.097 J**	**1.957 J**	**2.041 J**	**17.14 J**	**45.51 J**	NA	**6.53 J**	**8.8**	**37.7**
TEQ Summation^																				
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.6E-04**	**5.8E-04**
Metals, total																				
(mg/kg)	Antimony	20	20	30	30	3.1 U	**9.8**	NA	**12**	8.7 U	3.4 U	3.2 U	2.8 U	3.6 U	3.1 U	3.0 U	NA	3.2 U	NA	NA
	Arsenic	20	20	20	20	**7.3**	**8.4**	NA	**17**	8.7 U	**12**	**19**	**8.4**	**7.9**	**7.1**	**14**	NA	**7.6**	NA	NA
	Barium	1,000	1,000	3,000	3,000	**1,500**	**2,300**	NA	**3,300**	**68**	**3,600**	**2,100**	**500**	**340**	**840**	**7,300**	NA	**1,500**	NA	NA
	Beryllium	90	90	200	200	**0.68**	0.31 U	NA	0.39 U	0.87 U	**0.56**	**0.62**	**0.93**	0.36 U	**0.33**	**1.1**	NA	**0.40**	NA	NA
	Cadmium	70	70	100	100	**5.1**	**5.6**	NA	**7.4**	**2.4**	**15**	**3.3**	**2.1**	**2.8**	**2.8**	**5.7**	NA	**2.7**	NA	NA
	Chromium (III)	1,000	1,000	3,000	3,000	**150**	**680**	**590**	**360**	**14**	**160**	**64**	**41**	**61**	**79**	**350**	**740**	**130**	NA	NA
	Chromium (VI)	100	100	200	200	NA	NA	**8**	NA	NA	NA	NA	NA	NA	NA	NA	**9.6**	NA	NA	NA
	Lead	200	200	600	600	**760**	**820**	NA	**2,300**	**37**	**1,600**	**4,200**	**1,700**	**620**	**1,200**	**2,200**	NA	**920**	NA	NA
	Mercury	20	20	30	30	**0.77**	**0.91**	NA	**1.1**	**0.060**	**0.91**	**0.63**	**0.42**	**0.35**	**0.74**	**1.1**	NA	**0.47**	NA	NA
	Nickel	600	600	1000	1000	**38**	**66**	NA	**190**	**13**	**56**	**39**	**30**	**31**	**28**	**82**	NA	**39**	NA	NA
	Selenium	400	400	700	700	6.2 U	6.1 U	NA	78 U	17 U	6.8 U	64 U	5.6 U	72 U	6.2 U	61 U	NA	6.3 U	NA	NA
	Silver	100	100	200	200	0.62 U	6.1 U	NA	7.8 U	1.7 U	0.68 U	0.64 U	1.1 U	0.72 U	0.62 U	6.1 U	NA	0.63 U	NA	NA
	Vanadium	400	400	700	700	**130**	**290**	NA	**240**	**15**	**93**	**46**	**180**	**82**	**57**	**220**	NA	**82**	NA	NA
	Zinc	1,000	1,000	3,000	3,000	**560**	**800**	NA	**1,600**	**93**	**1,700**	**1,100**	**500**	**370**	**540**	**1,600**	NA	**620**	NA	NA

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-7							SB-NM-7		SB-NM-7A	SB-NM-8			SB-NM-9			SB-NM-10			
		Sample Depth (ft.):				0-1	1-3	1-3	1.5-2.5	2.5-3	5-7	7-9	0-1	1-3	1.5-2.5	0-1	1-3	5-7	0-1	1-3	7-9	0-1	1-3	3-5	5-7
		Sample Date:				12/15/10	12/15/10	6/10/2011	6/10/2011	6/10/2011	12/15/10 combo	12/15/10	06/10/2011	06/10/2011	6/10/2011	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010 combo
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																				
VOCs																									
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	**67**	**0.015**	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	**22**	**0.0055**	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	**5.0**	0.0033 U	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	**37**	**0.0093**	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	**10**	0.0033 U	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10	30	10	200	NA	NA	NA	3.4 U	0.0033 U	NA	NA	NA	NA	**0.0073**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	**150**	**0.059**	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	**250**	**0.074**	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																									
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	3.4 U	0.0033 U	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	40	500	40	1,000	0.40 U	0.46 U	NA	**26**	0.0067 U	0.465 U	0.45 U	NA	NA	0.0075 U	0.46 U	0.44 U	0.87 U	0.48 U	**0.45**	3.6 U	2.1 U	**0.23**	**1.0**	NA
	Toluene	500	500	1,000	1,000	NA	NA	NA	3.4 U	0.0033 U	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	300	500	300	1,000	NA	NA	NA	**4.2**	0.0067 U	NA	NA	NA	NA	0.0075 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																									
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																									
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	**0.79**	0.46 U	NA	NA	NA	0.465 U	0.45 U	NA	NA	NA	0.46 U	0.44 U	0.87 U	**0.87**	**0.76**	3.6 U	2.1 U	**0.58**	**0.38**	NA
	Acenaphthylene	600	10	600	10	**0.75**	0.46 U	NA	NA	NA	0.465 U	0.45 U	NA	NA	NA	0.46 U	0.44 U	0.87 U	0.48 U	0.41 U	3.6 U	2.1 U	0.21 U	**0.85**	NA
	Anthracene	1,000	1,000	3,000	3,000	**4.4**	**0.60**	NA	NA	NA	**0.375 J**	**0.66**	NA	NA	NA	**0.89**	**0.90**	**1.1**	**2.5**	**1.6**	3.6 U	**5.0**	**1.4**	**1.3**	NA
	Benzo(a)anthracene	7	7	40	40	**7.9**	**2.1**	NA	NA	NA	**1.125**	**2.4**	NA	NA	NA	**2.4**	**2.3**	**2.7**	**8.6**	**4.3**	3.6 U	**11**	**3.2**	**2.6**	NA
	Benzo(a)pyrene	2	2	4	4	**5.8**	**1.9**	NA	NA	NA	**0.99**	**2.4**	NA	NA	NA	**2.2**	**2.1**	**2.6**	**7.3**	**4.0**	3.6 U	**9.9**	**2.9**	**2.3**	NA
	Benzo(b)fluoranthene	7	7	40	40	**7.0**	**2.2**	NA	NA	NA	**1.3**	**3.1**	NA	NA	NA	**3.0**	**2.7**	**3.4**	**10**	**5.8**	3.6 U	**13**	**4.2**	**3.1**	NA
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**3.3**	**1.1**	NA	NA	NA	**0.475**	**1.2**	NA	NA	NA	**0.98**	**1.3**	**1.4**	**2.6**	**2.4**	3.6 U	**4.1**	**1.2**	**0.79**	NA
	Benzo(k)fluoranthene	70	70	400	400	**2.3**	**0.88**	NA	NA	NA	**0.51**	**0.96**	NA	NA	NA	**1.1**	**0.93**	**1.4**	**3.6**	**2.0**	3.6 U	**4.8**	**1.5**	**1.2**	NA
	Chrysene	70	70	400	400	**7.3**	**2.0**	NA	NA	NA	**1.125**	**2.6**	NA	NA	NA	**2.5**	**2.4**	**2.8**	**8.8**	**4.3**	3.6 U	**10**	**2.9**	**2.6**	NA
	Dibenz(a,h)anthracene	0.7	0.7	4	4	**1.3**	0.46 U	NA	NA	NA	0.465 U	0.45 U	NA	NA	NA	0.46 U	**0.45**	0.87 U	**0.92**	**0.76**	3.6 U	2.1 U	**0.44**	**0.27**	NA
	Fluoranthene	1,000	1,000	3,000	3,000	**16**	**3.2**	NA	NA	NA	**1.95**	**3.4**	NA	NA	NA	**4.3**	**4.7**	**5.4**	**16**	**8.9**	**4.0**	**20**	**6.3**	**8.3**	NA
	Fluorene	1,000	1,000	3,000	3,000	**1.5**	0.46 U	NA	NA	NA	0.465 U	0.45 U	NA	NA	NA	0.46 U	0.44 U	0.87 U	**0.92**	**0.83**	3.6 U	**2.4**	**0.56**	**1.2**	NA
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**4.7**	**1.5**	NA	NA	NA	**0.64**	**1.5**	NA	NA	NA	**1.3**	**1.6**	**1.8**	**3.6**	**3.1**	3.6 U	**5.3**	**1.6**	**1.1**	NA
	2-Methylnaphthalene	80	300	80	500	0.40 U	0.46 U	NA	NA	NA	0.465 U	0.45 U	NA	NA	NA	0.46 U	0.44 U	0.87 U	0.48 U	0.41 U	3.6 U	2.1 U	0.21 U	**0.77**	NA
	Phenanthrene	500	500	1,000	1,000	**16**	**2.2**	NA	NA	NA	**1.6**	**2.2**	NA	NA	NA	**4.1**	**3.9**	**5.2**	**12**	**7.8**	**4.9**	**20**	**5.0**	**12**	NA
	Pyrene	1,000	1,000	3,000	3,000	**15**	**3.2**	NA	NA	NA	**1.5**	**3.6**	NA	NA	NA	**3.5**	**3.7**	**3.9**	**18**	**6.3**	3.6 U	**17**	**3.9**	**4.1**	NA
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																									
(mg/kg)	Total PCBs	1	1	4	4	**6.49 J**	**6.02 J**	NA	NA	NA	**4.021 J**	NA	**14.6**	**14.8**	NA	**46.78 J**	**22.83 J**	**8.66 J**	**54.08 J**	**4.776 J**	**0.759 J**	**10.11 J**	**12.11 J**	**8.668 J**	**3.31 J**
TEQ Summation^																									
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	**3.9E-04**	**2.4E-04**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																									
(mg/kg)	Antimony	20	20	30	30	3.0 U	3.4 U	NA	NA	NA	3.45 U	3.4 U	NA	NA	NA	3.3 U	**4.4**	**6.5**	**6.5**	3.0 U	2.7 U	**6.0**	3.2 U	3.1 U	NA
	Arsenic	20	20	20	20	3.0 U	**12**	NA	NA	NA	**15.5**	**11**	NA	NA	NA	**15**	**18**	**19**	**14**	**17**	2.7 U	**22**	**16**	**4.1**	NA
	Barium	1,000	1,000	3,000	3,000	**110**	**1,300**	NA	NA	NA	**755**	**450**	NA	NA	NA	**1,700**	**1,000**	**830**	**1,800**	**1,100**	**43**	**2,400**	**3,000**	**190**	NA
	Beryllium	90	90	200	200	0.30 U	0.34 U	NA	NA	NA	0.345 U	0.33 U	NA	NA	NA	**1.3**	**1.2**	**1.6**	**1.2**	**0.98**	**1.7**	**1.6**	**2.3**	0.31 U	NA
	Cadmium	70	70	100	100	**0.54**	**4.2**	NA	NA	NA	**3.1**	**2.8**	NA	NA	NA	**3.3**	**7.6**	**5.4**	**6.0**	**3.5**	**0.30**	**4.0**	**4.1**	**0.80**	NA
	Chromium (III)	1,000	1,000	3,000	3,000	**14**	**490**	**76**	NA	NA	**190**	**26**	NA	NA	NA	**200**	**140**	**77**	**160**	**71**	**26**	**190**	**510**	**23**	NA
	Chromium (VI)	100	100	200	200	NA	NA	**26**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	200	200	600	600	**200**	**3,400**	NA	NA	NA	**1,280**	**1,000**	NA	NA	NA	**1,600**	**1,400**	**2,100**	**1,300**	**1,200**	**64**	**5,800**	**1,300**	**300**	NA
	Mercury	20	20	30	30	**0.14**	**1.0**	NA	NA	NA	**1.5**	**0.40**	NA	NA	NA	**1.4**	**2.1**	**1.8**	**1.3**	**0.44**	**0.015**	**1.4**	**1.2**	**0.55**	NA
	Nickel	600	600	1000	1000	**7.0**	**100**	NA	NA	NA	**56**	**34**	NA	NA	NA	**37**	**49**	**63**	**45**	**40**	**14**	**49**	**63**	**9.8**	NA
	Selenium	400	400	700	700	5.9 U	6.9 U	NA	NA	NA	6.9 U	6.7 U	NA	NA	NA	6.5 U	6.3 U	6.3 U	7.2 U	5.9 U	5.4 U	6.1 U	6.5 U	6.1 U	NA
	Silver	100	100	200	200	0.59 U	1.4 U	NA	NA	NA	0.69 U	0.67 U	NA	NA	NA	0.65 U	**8.0**	**0.79**	**1.9**	0.59 U	0.54 U	**0.81**	0.65 U	0.61 U	NA
	Vanadium	400	400	700	700	**19**	**250**	NA	NA	NA	**100**	**22**	NA	NA	NA	**130**	**64**	**61**	**82**	**51**	**28**	**120**	**240**	**16**	NA
	Zinc	1,000	1,000	3,000	3,000	**82**	**1,100**	NA	NA	NA	**880**	**420**	NA	NA	NA	**810**	**1,400**	**890**	**1,100**	**730**	**90**	**1,200**	**1,300**	**200**	NA

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
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PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-11				SB-NM-11		SB-NM-12			SB-NM-13				SB-NM-14		
		Sample Depth (ft.):				0-1	1-3	3-5	5-7	0-1	1-3	0-1	1-3	3-5	0-1	1-3	3-5	11-12	0-1	1-3	3-5
		Sample Date:				12/15/2010	12/15/2010	12/15/2010	12/15/2010	06/10/2011	06/10/2011	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/16/2010	12/16/2010	12/16/2010 combo
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																
VOCs																					
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10	30	10	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																					
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	40	500	40	1,000	0.51 U	**0.86**	**0.81**	NA	NA	NA	1.2 U	**1.9**	0.26 U	1.0 U	0.85 U	0.56 U	**0.91**	1.0 U	0.37 U	0.615 U
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	300	500	300	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																					
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																					
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	0.51 U	**1.4**	**0.98**	NA	NA	NA	1.2 U	**1.9**	0.26 U	1.0 U	0.85 U	0.56 U	**0.77**	**1.3**	0.37 U	**0.445 J**
	Acenaphthylene	600	10	600	10	0.51 U	0.42 U	0.21 U	NA	NA	NA	1.2 U	0.87 U	0.26 U	1.0 U	0.85 U	0.56 U	0.49 U	1.0 U	0.37 U	**0.43 J**
	Anthracene	1,000	1,000	3,000	3,000	**1.1**	**3.8**	**2.6**	NA	NA	NA	**2.9**	**5.2**	**0.37**	1.0 U	0.85 U	0.56 U	**2.2**	**1.6**	**0.41**	**1.15 J**
	Benzo(a)anthracene	7	7	40	40	**2.5**	**6.2**	**4.5**	NA	NA	NA	**5.9**	**12**	**1.2**	1.0 U	**1.1**	0.56 U	**2.6**	**3.0**	**1.4**	**5.8**
	Benzo(a)pyrene	2	2	4	4	**2.4**	**5.2**	**4.0**	NA	NA	NA	**4.7**	**10**	**1.5**	1.0 U	**1.1**	0.56 U	**2.2**	**2.7**	**1.3**	**4.7**
	Benzo(b)fluoranthene	7	7	40	40	**3.3**	**7.1**	**6.0**	NA	NA	NA	**7.4**	**15**	**1.9**	**1.2**	**1.4**	**0.57**	**2.7**	**4.0**	**1.5**	**5.2**
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**1.2**	**2.2**	**1.6**	NA	NA	NA	**1.6**	**4.8**	**0.71**	1.0 U	0.85 U	0.56 U	**0.91**	1.0 U	**0.70**	**2.6**
	Benzo(k)fluoranthene	70	70	400	400	**1.2**	**2.7**	**2.0**	NA	NA	NA	**3.0**	**5.2**	**0.76**	1.0 U	0.85 U	0.56 U	**1.0**	**1.6**	**0.55**	**1.9**
	Chrysene	70	70	400	400	**2.4**	**5.7**	**4.1**	NA	NA	NA	**5.8**	**11**	**1.2**	1.0 U	**1.1**	0.56 U	**2.5**	**3.0**	**1.5**	**5.6**
	Dibenz(a,h)anthracene	0.7	0.7	4	4	0.51 U	**0.78**	**0.61**	NA	NA	NA	1.2 U	**1.6**	**0.26**	1.0 U	0.85 U	0.56 U	0.49 U	1.0 U	0.37 U	**0.63 J**
	Fluoranthene	1,000	1,000	3,000	3,000	**5.6**	**11**	**9.8**	NA	NA	NA	**16**	**19**	**2.1**	**2.3**	**1.6**	**0.71**	**5.3**	**5.3**	**1.9**	**7.8**
	Fluorene	1,000	1,000	3,000	3,000	**0.54**	**1.7**	**1.1**	NA	NA	NA	**1.4**	**2.3**	0.26 U	1.0 U	0.85 U	0.56 U	**1.4**	1.0 U	0.37 U	**0.635 J**
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**1.4**	**2.9**	**2.3**	NA	NA	NA	**2.4**	**6.2**	**0.95**	1.0 U	0.85 U	0.56 U	**1.3**	**1.3**	**0.89**	**3.3**
	2-Methylnaphthalene	80	300	80	500	0.51 U	**0.53**	**0.38**	NA	NA	NA	1.2 U	**1.0**	0.26 U	1.0 U	0.85 U	0.56 U	0.49 U	1.0 U	0.37 U	0.615 U
	Phenanthrene	500	500	1,000	1,000	**4.8**	**14**	**12**	NA	NA	NA	**14**	**22**	**1.7**	**1.3**	**1.2**	**0.64**	**7.7**	**6.5**	**1.9**	**9.3**
	Pyrene	1,000	1,000	3,000	3,000	**3.5**	**8.1**	**6.6**	NA	NA	NA	**9.5**	**18**	**1.5**	**1.6**	**1.5**	**0.77**	**4.4**	**3.3**	**2.8**	**9.3**
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																					
(mg/kg)	Total PCBs	1	1	4	4	**17.9 J**	**92.9 J**	**63.0 J**	**1.062 J**	**27.7**	**28.7**	**11.56 J**	**44.84 J**	**16.58 J**	**14.33 J**	**3.872 J**	**1.492 J**	**0.885 J**	**26.21 J**	**12.08 J**	**3.088 J**
TEQ Summation^																					
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	**4.7E-04**	**4.3E-04**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																					
(mg/kg)	Antimony	20	20	30	30	3.8 U	**5.0**	**4.1**	NA	NA	NA	3.4 U	**6.8**	**6.5**	3.6 U	3.1 U	4.2 U	**4.0**	3.1 U	2.8 U	**8.6**
	Arsenic	20	20	20	20	**8.5**	**13**	**11**	NA	NA	NA	**31**	**12**	**10**	**9.1**	**14**	**10**	**9.0**	**12**	**13**	**6.1**
	Barium	1,000	1,000	3,000	3,000	**1,100**	**590**	**460**	NA	NA	NA	**1,300**	**1,500**	**760**	**2,100**	**1,200**	**1,400**	**390**	**1,200**	**840**	**670**
	Beryllium	90	90	200	200	**1.1**	**1.3**	**1.2**	NA	NA	NA	**1.8**	**1.3**	**1.1**	**1.3**	**0.98**	**1.3**	**2.7**	**0.56**	0.28 U	**0.2625 J**
	Cadmium	70	70	100	100	**3.3**	**5.3**	**6.0**	NA	NA	NA	**4.9**	**5.0**	**5.5**	**3.7**	**7.9**	**2.9**	**3.1**	**3.3**	**2.6**	**2**
	Chromium (III)	1,000	1,000	3,000	3,000	**72**	**37**	**21**	NA	NA	NA	**280**	**140**	**46**	**130**	**68**	**150**	**41**	**71**	**48**	**150**
	Chromium (VI)	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	200	200	600	600	**840**	**1,100**	**1,400**	NA	NA	NA	**970**	**2,000**	**1,200**	**1,000**	**2,400**	**13,000**	**1,000**	**1,000**	**1,300**	**580**
	Mercury	20	20	30	30	**0.99**	**0.89**	**0.87**	NA	NA	NA	**0.79**	**2.1**	**1.1**	**0.88**	**0.65**	**0.65**	**0.32**	**1.1**	**1.5**	**3.3**
	Nickel	600	600	1000	1000	**44**	**32**	**22**	NA	NA	NA	**65**	**36**	**46**	**35**	**140**	**53**	**32**	**62**	**100**	**25**
	Selenium	400	400	700	700	7.7 U	6.2 U	6.2 U	NA	NA	NA	34 U	6.5 U	7.8 U	7.2 U	6.1 U	17 U	7.1 U	6.2 U	**6.9**	5.95 U
	Silver	100	100	200	200	0.77 U	**0.70**	0.62 U	NA	NA	NA	0.67 U	0.65 U	0.78 U	0.72 U	**1.3**	0.83 U	0.71 U	0.62 U	0.57 U	0.595 U
	Vanadium	400	400	700	700	**55**	**38**	**30**	NA	NA	NA	**170**	**70**	**39**	**83**	**40**	**82**	**280**	**69**	**62**	**75**
	Zinc	1,000	1,000	3,000	3,000	**700**	**670**	**810**	NA	NA	NA	**1,100**	**1,100**	**840**	**860**	**710**	**710**	**710**	**840**	**750**	**1,500**

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-15						SB-NM-15		SB-NM-16			SB-NM-17				SB-NM-18				
		Sample Depth (ft.):				0-1	1-3	1-3	3-5	8.5-9.5	11-12	0-1	1-3	0-1	1-3	3-5	0-1	1-3	3-5	11.5-13	0-1	1-3	6-8	10.5-12	12-13.5
		Sample Date:				12/16/2010	12/16/2010 combo	6/10/2011	12/16/2010 combo	12/16/2010	12/16/2010	06/10/2011	06/10/2011	12/16/2010	12/16/2010 combo	12/16/2010	12/16/10	12/16/10	12/16/10	12/16/10 combo	12/16/10	12/16/10 combo	12/16/10	12/16/10	12/16/10
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																				
VOCs																									
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	0.60 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	0.60 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	1.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	0.60 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	0.60 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10	30	10	200	NA	NA	NA	NA	0.60 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	**1.9**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	2.4 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																									
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	0.60 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	40	500	40	1,000	**0.58**	**1.425 J**	NA	0.39 U	**180**	**0.57**	NA	NA	**1.4**	**0.82**	**4.6**	1.2 U	1.0 U	0.20 U	1.045 U	0.48 U	0.845 U	3.4 U	0.38 U	NA
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	0.60 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	300	500	300	1,000	NA	NA	NA	NA	1.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																									
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																									
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	**0.78**	**2.6**	NA	0.39 U	NA	**0.68**	NA	NA	**4.2**	**1**	**4.0**	1.2 U	1.0 U	**0.21**	1.045 U	0.48 U	0.845 U	3.4 U	0.38 U	NA
	Acenaphthylene	600	10	600	10	0.47 U	1.565 U	NA	0.39 U	NA	**0.70**	NA	NA	**1.3**	**1.5**	**7.0**	1.2 U	1.0 U	0.20 U	1.045 U	0.48 U	0.845 U	3.4 U	0.38 U	NA
	Anthracene	1,000	1,000	3,000	3,000	**1.6**	**4.95**	NA	0.39 U	NA	**2.8**	NA	NA	**19**	**5.1**	**19**	**1.6**	1.0 U	**0.67**	1.045 U	**1.1**	**0.805 J**	**6.0**	**0.42**	NA
	Benzo(a)anthracene	7	7	40	40	**3.0**	**9.95**	NA	**0.89**	NA	**4.7**	NA	NA	**32**	**10**	**44**	**3.4**	**1.8**	**2.0**	1.045 U	**2.4**	**2.7**	**12**	**1.0**	NA
	Benzo(a)pyrene	2	2	4	4	**2.5**	**9.35**	NA	**0.82**	NA	**3.8**	NA	NA	**24**	**8.4**	**36**	**3.4**	**1.9**	**2.0**	1.045 U	**2.2**	**2.45**	**10**	**0.97**	NA
	Benzo(b)fluoranthene	7	7	40	40	**3.1**	**13.5**	NA	**1.2**	NA	**4.4**	NA	NA	**30**	**11**	**44**	**4.7**	**2.6**	**2.8**	1.045 U	**2.8**	**3.1**	**11**	**1.1**	NA
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**1.1**	**4.9**	NA	0.39 U	NA	**1.5**	NA	NA	**6.4**	**2.9**	**11**	**1.3**	1.0 U	**1.1**	1.045 U	**1.1**	**1.65**	**7.5**	**0.80**	NA
	Benzo(k)fluoranthene	70	70	400	400	**1.1**	**4.75**	NA	**0.44**	NA	**1.6**	NA	NA	**11**	**4.2**	**12**	**1.8**	1.0 U	**1.0**	1.045 U	**1.1**	**0.975**	**4.3**	0.38 U	NA
	Chrysene	70	70	400	400	**2.9**	**9.75**	NA	**1.2**	NA	**4.3**	NA	NA	**28**	**9.5**	**39**	**3.5**	**1.7**	**2.0**	1.045 U	**2.3**	**2.6**	**12**	**1.0**	NA
	Dibenz(a,h)anthracene	0.7	0.7	4	4	0.47 U	**1.125 J**	NA	0.39 U	NA	**0.46**	NA	NA	**2.7**	**0.99**	**3.9**	1.2 U	1.0 U	**0.34**	1.045 U	0.48 U	0.845 U	3.4 U	0.38 U	NA
	Fluoranthene	1,000	1,000	3,000	3,000	**5.9**	**21.5**	NA	**1.5**	NA	**11**	NA	NA	**62**	**22**	**78**	**8.5**	**3.4**	**3.8**	1.045 U	**4.6**	**6.1**	**23**	**1.8**	NA
	Fluorene	1,000	1,000	3,000	3,000	**0.77**	**2.1**	NA	0.39 U	NA	**2.0**	NA	NA	**7.6**	**3.4**	**12**	1.2 U	1.0 U	**0.24**	1.045 U	**0.55**	0.845 U	3.4 U	0.38 U	NA
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**1.5**	**5.95**	NA	**0.48**	NA	**2.1**	NA	NA	**9.7**	**4.2**	**15**	**1.7**	**1.1**	**1.4**	1.045 U	**1.4**	**2.5**	**9.4**	**0.84**	NA
	2-Methylnaphthalene	80	300	80	500	0.47 U	1.565 U	NA	0.39 U	NA	**0.68**	NA	NA	**1.2**	**1.3**	**5.8**	1.2 U	1.0 U	0.20 U	1.045 U	0.48 U	0.845 U	3.4 U	0.38 U	NA
	Phenanthrene	500	500	1,000	1,000	**6.4**	**21**	NA	**1.9**	NA	**17**	NA	NA	**69**	**32**	**120**	**6.7**	**2.6**	**2.9**	1.045 U	**4.6**	**3.8**	**19**	**1.8**	NA
	Pyrene	1,000	1,000	3,000	3,000	**4.9**	**19**	NA	**1.8**	NA	**12**	NA	NA	**52**	**17**	**91**	**5.5**	**2.3**	**2.5**	1.045 U	**4.2**	**4.65**	**25**	**2.5**	NA
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																									
(mg/kg)	Total PCBs	1	1	4	4	**12.18 J**	**35.64 J**	NA	**1.352 J**	NA	0.0586 U	**27.8**	**39.6**	**30.43 J**	**149.1 J**	**1.383 J**	**35.66 J**	**18.14 J**	**8.21 J**	**0.406 J**	**20.85 J**	**28.62 J**	**41.39 J**	**5.658 J**	**0.42 J**
TEQ Summation^																									
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	**3.9E-04**	**4.5E-04**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																									
(mg/kg)	Antimony	20	20	30	30	**4.0**	**3.075 J**	NA	**2.8 U**	NA	2.7 U	NA	NA	**25**	**2.6 U**	6.6 U	4.1 U	3.7 U	**5.6**	7.8 U	3.4 U	**11.275 J**	5.1 U	2.7 U	NA
	Arsenic	20	20	20	20	**12**	**20.5**	NA	**2.8 U**	NA	2.7 U	NA	NA	**9.9**	**9**	**9.9**	**7.0**	**22**	**11**	7.8 U	**15**	**11**	**17**	**3.0**	NA
	Barium	1,000	1,000	3,000	3,000	**1,700**	**2,450**	NA	**420**	NA	**15**	NA	NA	**1,600**	**1,400**	**370**	**910**	**1,400**	**690**	**215**	**1,200**	**1,155**	**2,400**	**190**	NA
	Beryllium	90	90	200	200	**0.77**	**0.875**	NA	**0.28 U**	NA	0.27 U	NA	NA	**1.8**	**0.55**	0.66 U	0.41 U	**0.48**	**0.93**	0.78 U	**0.62**	**0.5**	**0.76**	0.27 U	NA
	Cadmium	70	70	100	100	**4.9**	**4.45**	NA	**0.76**	NA	0.27 U	NA	NA	**3.7**	**2.3**	**1.3**	**5.1**	**3.8**	**3.5**	**2.5**	**3.5**	**20**	**10**	**0.63**	NA
	Chromium (III)	1,000	1,000	3,000	3,000	**200**	**270**	**270**	**28**	NA	**5.7**	NA	NA	**110**	**96**	**51**	**97**	**110**	**280**	**27.5**	**110**	**71.5**	**170**	**14**	NA
	Chromium (VI)	100	100	200	200	NA	NA	**20**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	200	200	600	600	**1,500**	**1,400**	NA	**270**	NA	**5.9**	NA	NA	**1,100**	**770**	**1,600**	**920**	**1,400**	**1,300**	**370**	**940**	**1,400**	**2,200**	**140**	NA
	Mercury	20	20	30	30	**1.0**	**1.75**	NA	**0.17**	NA	**0.0094**	NA	NA	**2.1**	**0.89**	**1.1**	**1.4**	**2.1**	**1.1**	**0.115**	**1.0**	**1.6**	**1.2**	**0.17**	NA
	Nickel	600	600	1000	1000	**68**	**83**	NA	**17**	NA	**2.3**	NA	NA	**73**	**39**	**30**	**32**	**41**	**64**	**31**	**37**	**39**	**65**	**9.2**	NA
	Selenium	400	400	700	700	6.8 U	13 U	NA	**5.6 U**	NA	5.3 U	NA	NA	6.3 U	**11 U**	13 U	8.2 U	7.5 U	12 U	15.5 U	6.9 U	6.2 U	10 U	5.3 U	NA
	Silver	100	100	200	200	0.68 U	**2.825 J**	NA	**0.56 U**	NA	0.53 U	NA	NA	3.2 U	**0.53 U**	1.3 U	0.82 U	0.75 U	1.2 U	1.55 U	0.69 U	0.62 U	1.0 U	0.53 U	NA
	Vanadium	400	400	700	700	**110**	**135**	NA	**64**	NA	**5.3**	NA	NA	**290**	**97**	**43**	**77**	**64**	**130**	**38.5**	**77**	**57.5**	**110**	**18**	NA
	Zinc	1,000	1,000	3,000	3,000	**810**	**1,300**	NA	**290**	NA	**13**	NA	NA	**1,000**	**580**	**470**	**690**	**1,200**	**880**	**585**	**840**	**760**	**1,600**	**120**	NA

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-19				SB-NM-19		SB-NM-20				SB-NM-20		SB-NM-21			
		Sample Depth (ft.):				0-1	1-3	7-9	10-11	0-1	1-3	0-1	1-3	3-5	7-8	0-1	1-3	0-1	1-3	3-5	6-7
		Sample Date:				12/16/10	12/16/10	12/16/10	12/16/10	06/08/2011	06/08/2011	12/17/10	12/17/10	12/17/10	12/17/10	06/10/2011	06/10/2011 combo	12/17/10	12/17/10 combo	12/17/10	12/17/10 combo
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																
VOCs																					
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10	30	10	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																					
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	40	500	40	1,000	0.94 U	0.82 U	**1.0**	1.6 U	NA	NA	0.38 U	**0.95**	0.89 U	0.28 U	NA	NA	0.45 U	0.44 U	**1.1**	0.20 U
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	300	500	300	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																					
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																					
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	0.94 U	0.82 U	1.0 U	1.6 U	NA	NA	0.38 U	**4.1**	0.89 U	0.28 U	NA	NA	0.45 U	0.44 U	**2.1**	0.20 U
	Acenaphthylene	600	10	600	10	0.94 U	0.82 U	1.0 U	1.6 U	NA	NA	0.38 U	0.93 U	0.89 U	0.28 U	NA	NA	0.45 U	0.44 U	0.97 U	0.20 U
	Anthracene	1,000	1,000	3,000	3,000	0.94 U	0.82 U	**1.3**	1.6 U	NA	NA	0.38 U	**5.0**	0.89 U	0.28 U	NA	NA	**0.80**	**0.78**	**2.7**	0.20 U
	Benzo(a)anthracene	7	7	40	40	**1.4**	**1.6**	**3.2**	1.6 U	NA	NA	**0.57**	**15**	**1.7**	0.28 U	NA	NA	**2.9**	**2.25**	**5.5**	0.20 U
	Benzo(a)pyrene	2	2	4	4	**1.2**	**1.7**	**2.9**	1.6 U	NA	NA	**0.54**	**15**	**1.7**	0.28 U	NA	NA	**3.4**	**2.8**	**5.5**	0.20 U
	Benzo(b)fluoranthene	7	7	40	40	**1.4**	**1.8**	**4.0**	1.6 U	NA	NA	**0.73**	**22**	**2.2**	0.28 U	NA	NA	**4.2**	**3.55**	**7.1**	0.20 U
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	0.94 U	**1.2**	**2.3**	1.6 U	NA	NA	0.38 U	**9.8**	0.89 U	0.28 U	NA	NA	**1.6**	**1.25**	**2.7**	0.20 U
	Benzo(k)fluoranthene	70	70	400	400	0.94 U	0.82 U	**1.3**	1.6 U	NA	NA	0.38 U	**13**	0.89 U	0.28 U	NA	NA	**1.6**	**1.4**	**2.3**	0.20 U
	Chrysene	70	70	400	400	**1.4**	**1.7**	**3.3**	1.6 U	NA	NA	**0.61**	**16**	**1.7**	0.28 U	NA	NA	**3.1**	**2.35**	**5.5**	0.20 U
	Dibenz(a,h)anthracene	0.7	0.7	4	4	0.94 U	0.82 U	1.0 U	1.6 U	NA	NA	0.38 U	**3.0**	0.89 U	0.28 U	NA	NA	**0.51**	0.44 U	0.97 U	0.20 U
	Fluoranthene	1,000	1,000	3,000	3,000	**2.3**	**2.5**	**4.7**	1.6 U	NA	NA	**0.65**	**28**	**2.2**	0.28 U	NA	NA	**3.4**	**3.05**	**9.4**	0.20 U
	Fluorene	1,000	1,000	3,000	3,000	0.94 U	0.82 U	1.0 U	1.6 U	NA	NA	0.38 U	**3.5**	0.89 U	0.28 U	NA	NA	0.45 U	0.44 U	**1.4**	0.20 U
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**1.2**	**1.1**	**2.5**	1.6 U	NA	NA	0.38 U	**13**	**1.0**	0.28 U	NA	NA	**2.0**	**1.65**	**3.5**	0.20 U
	2-Methylnaphthalene	80	300	80	500	0.94 U	0.82 U	1.0 U	1.6 U	NA	NA	0.38 U	0.93 U	0.89 U	0.28 U	NA	NA	0.45 U	0.44 U	0.97 U	0.20 U
	Phenanthrene	500	500	1,000	1,000	**1.9**	**2.5**	**5.1**	1.6 U	NA	NA	**0.77**	**28**	**3.1**	0.28 U	NA	NA	**3.8**	**3.3**	**9.7**	0.20 U
	Pyrene	1,000	1,000	3,000	3,000	**2.4**	**3.0**	**5.0**	1.6 U	NA	NA	**0.97**	**25**	**2.8**	0.28 U	NA	NA	**4.5**	**3**	**8.3**	0.20 U
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																					
(mg/kg)	Total PCBs	1	1	4	4	**14.35 J**	**17.77 J**	**299.6 J**	**28.5 J**	**17.3**	**21.7**	**0.966 J**	**24.28 J**	**12.02 J**	**11.65 J**	**0.8**	**30.9**	**20.24 J**	**21.56 J**	**5.993 J**	**0.10563 J**
TEQ Summation^																					
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	**1.1E-03**	**1.8E-04**	NA	NA	NA	NA	**6.4E-05**	**7.4E-04**	NA	NA	NA	NA
Metals, total																					
(mg/kg)	Antimony	20	20	30	30	**310**	3.2 U	3.9 U	5.9 U	NA	NA	2.8 U	3.4 U	3.3 U	4.2 U	NA	NA	**3.7**	3.15 U	**4.0**	3.0 U
	Arsenic	20	20	20	20	**13**	**9.8**	**16**	5.9 U	NA	NA	2.8 U	**6.3**	**15**	4.2 U	NA	NA	**14**	**15.5**	**18**	3.0 U
	Barium	1,000	1,000	3,000	3,000	**810**	**1,100**	**1,500**	**1,200**	NA	NA	**110**	**710**	**670**	**140**	NA	NA	**700**	**2,000**	**2,600**	**24**
	Beryllium	90	90	200	200	**1.3**	**0.46**	**1.2**	0.59 U	NA	NA	0.28 U	0.34 U	0.33 U	0.42 U	NA	NA	0.33 U	0.315 U	0.37 U	0.30 U
	Cadmium	70	70	100	100	**3.4**	**11**	**3.9**	**0.80**	NA	NA	**0.43**	**2.6**	**4.1**	**0.55**	NA	NA	**4.0**	**3.55**	**4.7**	0.30 U
	Chromium (III)	1,000	1,000	3,000	3,000	**130**	**77**	**140**	**22**	NA	NA	**24**	**64**	**42**	**8.1**	NA	NA	**47**	**53**	**160**	**2.8**
	Chromium (VI)	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	200	200	600	600	**2,700**	**860**	**1,100**	**150**	NA	NA	**100**	**970**	**1,500**	**110**	NA	NA	**1,300**	**1,300**	**1,000**	**24**
	Mercury	20	20	30	30	**0.97**	**0.77**	**1.2**	**0.083**	NA	NA	**0.25**	**0.75**	**0.73**	**0.13**	NA	NA	**1.1**	**0.665**	**0.58**	**0.063**
	Nickel	600	600	1000	1000	**29**	**51**	**35**	**10**	NA	NA	**12**	**62**	**37**	**5.0**	NA	NA	**89**	**31**	**86**	**1.5**
	Selenium	400	400	700	700	7.2 U	6.4 U	7.7 U	12 U	NA	NA	5.7 U	6.9 U	13 U	8.3 U	NA	NA	6.7 U	6.35 U	15 U	6.1 U
	Silver	100	100	200	200	0.72 U	0.64 U	0.77 U	1.2 U	NA	NA	0.57 U	0.69 U	0.67 U	0.83 U	NA	NA	0.67 U	0.635 U	**2.3**	0.61 U
	Vanadium	400	400	700	700	**76**	**57**	**99**	**22**	NA	NA	**21**	**58**	**35**	**11**	NA	NA	**37**	**39**	**65**	**6.4**
	Zinc	1,000	1,000	3,000	3,000	**650**	**710**	**780**	**150**	NA	NA	**110**	**800**	**1,300**	**69**	NA	NA	**930**	**1,600**	**1,200**	**12**

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-22						SB-NM-23				SB-NM-24			SB-NM-25			
		Sample Depth (ft.):				0-1	1-3	3-5	8-10	11-12	12-13	0-1	1-3	3-5	11-12	0-1	1-3	3-5	0-1	1-3	3-5	7-8
		Sample Date:				12/17/10	12/17/10	12/17/10	12/17/2010 combo	12/17/10	12/17/10	12/17/10	12/17/10	12/17/10	12/17/10	12/17/10	12/17/10 combo	12/17/10 combo	12/17/10	12/17/10	12/17/10 combo	12/17/10
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																	
VOCs																						
(mg/kg)	n-Butylbenzene	100 (1)	100 (1)	500 (1)	500 (1)	NA	NA	NA	0.0041 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	sec-Butylbenzene	100 (1)	100 (1)	500 (1)	500 (1)	NA	NA	NA	0.00205 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Isopropylbenzene (Cumene)	100 (1)	100 (1)	500 (1)	500 (1)	NA	NA	NA	0.00205 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	100 (1)	100 (1)	500 (1)	500 (1)	NA	NA	NA	0.00205 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	100 (1)	100 (1)	500 (1)	500 (1)	NA	NA	NA	0.00205 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10	30	10	200	NA	NA	NA	0.00205 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	100 (1)	100 (1)	500 (1)	500 (1)	NA	NA	NA	0.00205 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,3,5-Trimethylbenzene	100 (1)	100 (1)	500 (1)	500 (1)	NA	NA	NA	0.00205 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																						
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	0.00205 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	40	500	40	1,000	1.2 U	**0.58**	0.24 U	**0.015**	0.21 U	NA	2.2 U	0.93 U	0.99 U	1.4 U	0.42 U	0.46 U	1.95 U	0.93 U	4.3 U	2.8 U	0.21 U
	Toluene	500	500	1,000	1,000	NA	NA	NA	0.00205 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	300	500	300	1,000	NA	NA	NA	0.0041 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																						
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																						
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	1.2 U	**0.88**	0.24 U	NA	0.21 U	NA	2.2 U	0.93 U	0.99 U	1.4 U	0.42 U	0.46 U	1.95 U	0.93 U	4.3 U	2.8 U	0.21 U
	Acenaphthylene	600	10	600	10	1.2 U	0.45 U	0.24 U	NA	0.21 U	NA	2.2 U	0.93 U	0.99 U	1.4 U	**0.72**	0.46 U	1.95 U	0.93 U	4.3 U	2.8 U	0.21 U
	Anthracene	1,000	1,000	3,000	3,000	**2.0**	**1.5**	**0.53**	NA	0.21 U	NA	2.2 U	0.93 U	**1.5**	1.4 U	**1.3**	**0.80**	**5.3**	**2.2**	4.3 U	**3.2**	0.21 U
	Benzo(a)anthracene	7	7	40	40	**5.2**	**3.4**	**1.4**	NA	0.21 U	NA	2.2 U	**2.7**	**4.4**	1.4 U	**3.9**	**2.5**	**11**	**7.6**	**5.6**	**8.0**	0.21 U
	Benzo(a)pyrene	2	2	4	4	**4.7**	**3.0**	**1.2**	NA	0.21 U	NA	2.2 U	**3.6**	**5.7**	1.4 U	**5.3**	**1.4**	**10.85**	**11**	**6.8**	**9.5**	0.21 U
	Benzo(b)fluoranthene	7	7	40	40	**5.9**	**3.7**	**1.4**	NA	0.21 U	NA	**2.3**	**4.1**	**6.9**	1.4 U	**6.3**	**2.6**	**19**	**14**	**10**	**14**	0.21 U
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**2.7**	**2.1**	**0.76**	NA	0.21 U	NA	2.2 U	**3.1**	**2.7**	1.4 U	**1.8**	**0.58**	**4.25**	**4.3**	4.3 U	**4.4**	0.21 U
	Benzo(k)fluoranthene	70	70	400	400	**2.0**	**1.5**	**0.43**	NA	0.21 U	NA	2.2 U	**1.5**	**2.9**	1.4 U	**2.4**	**0.85**	**7.2**	**5.0**	4.3 U	**5.0**	0.21 U
	Chrysene	70	70	400	400	**4.9**	**3.3**	**1.3**	NA	0.21 U	NA	2.2 U	**2.8**	**4.4**	1.4 U	**3.7**	**2.4**	**10**	**8.5**	**5.3**	**7.3**	0.21 U
	Dibenz(a,h)anthracene	0.7	0.7	4	4	1.2 U	**0.75**	0.24 U	NA	0.21 U	NA	2.2 U	**1.2**	0.99 U	1.4 U	**0.66**	0.46 U	1.95 U	**1.3**	4.3 U	2.8 U	0.21 U
	Fluoranthene	1,000	1,000	3,000	3,000	**9.2**	**5.7**	**2.6**	NA	0.21 U	NA	**3.7**	**3.1**	**4.8**	1.4 U	**5.4**	**3.5**	**27**	**10**	**13**	**18**	0.21 U
	Fluorene	1,000	1,000	3,000	3,000	1.2 U	**0.81**	**0.24**	NA	0.21 U	NA	2.2 U	0.93 U	0.99 U	1.4 U	0.42 U	0.46 U	1.95 U	0.93 U	4.3 U	2.8 U	0.21 U
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**3.9**	**2.7**	**0.99**	NA	0.21 U	NA	2.2 U	**3.8**	**3.4**	1.4 U	**2.8**	**0.78**	**5.55**	**5.1**	4.3 U	**5.4**	0.21 U
	2-Methylnaphthalene	80	300	80	500	1.2 U	0.45 U	0.24 U	NA	0.21 U	NA	2.2 U	0.93 U	0.99 U	1.4 U	0.42 U	0.46 U	1.95 U	0.93 U	4.3 U	2.8 U	0.21 U
	Phenanthrene	500	500	1,000	1,000	**8.9**	**6.6**	**2.0**	NA	0.21 U	NA	**3.3**	**2.9**	**5.9**	1.4 U	**6.9**	**1.0**	**19**	**11**	**8.0**	**13**	0.21 U
	Pyrene	1,000	1,000	3,000	3,000	**10**	**9.3**	**3.2**	NA	0.21 U	NA	**6.3**	**6.9**	**7.8**	1.4 U	**8.4**	**3.3**	**20**	**14**	**8.2**	**12**	0.21 U
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																						
(mg/kg)	Total PCBs	1	1	4	4	**17.94 J**	**66.45 J**	**25.84 J**	NA	**2.90 J**	**0.0742 J**	**22.51 J**	**60.06 J**	**27.44 J**	**4.63 J**	**3.648 J**	**28.595 J**	**337.4 J**	**23.74 J**	**127.6 J**	**61.305 J**	**0.118 J**
TEQ Summation^																						
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																						
(mg/kg)	Antimony	20	20	30	30	3.4 U	3.3 U	**5.7**	NA	2.9 U	NA	3.3 U	**17**	3.8 U	10 U	3.1 U	**37**	11.2 U	3.5 U	4.0 U	5.4 U	2.9 U
	Arsenic	20	20	20	20	**9.9**	**21**	**16**	NA	2.9 U	NA	**8.3**	**9.1**	**16**	10 U	**5.7**	**8.4**	**26**	**15**	**16**	**12**	2.9 U
	Barium	1,000	1,000	3,000	3,000	**1,000**	**1,300**	**1,300**	NA	**120**	NA	**1,200**	**1,400**	**3,900**	**990**	**280**	**500**	**2,150**	**7,500**	**4,100**	**2,000**	**37**
	Beryllium	90	90	200	200	**0.57**	**0.45**	**0.77**	NA	0.29 U	NA	0.33 U	0.34 U	0.38 U	1.0 U	0.31 U	**0.33 U**	0.365 U	0.35 U	0.40 U	0.54 U	0.29 U
	Cadmium	70	70	100	100	**3.0**	**4.1**	**3.8**	NA	0.29 U	NA	**3.1**	**2.8**	**5.2**	**1.1**	**1.6**	**2.3**	**5.85**	**11**	**11**	**4.9**	0.29 U
	Chromium (III)	1,000	1,000	3,000	3,000	**110**	**120**	**270**	NA	**32**	**6.9**	**100**	**120**	**480**	**46**	**28**	**47**	**405**	**230**	**300**	**180**	**15**
	Chromium (VI)	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	200	200	600	600	**1,100**	**1,600**	**1,100**	NA	**23**	NA	**1,100**	**990**	**1,600**	**190**	**550**	**1,300**	**63,000**	**1,500**	**1,500**	**1,100**	**37**
	Mercury	20	20	30	30	**2.1**	**1.0**	**0.82**	NA	**0.032**	NA	**1.5**	**3.2**	**20**	**0.23**	**0.45**	**0.35**	**1.65**	**1.8**	**2.6**	**1.5**	0.010 U
	Nickel	600	600	1000	1000	**39**	**46**	**43**	NA	**4.6**	NA	**31**	**33**	**61**	**11**	**12**	**18**	**110**	**61**	**59**	**49**	**5.5**
	Selenium	400	400	700	700	6.7 U	6.6 U	6.9 U	NA	5.9 U	NA	6.6 U	6.8 U	7.5 U	20 U	6.1 U	**6.5 U**	36.5 U	6.9 U	7.9 U	11 U	5.9 U
	Silver	100	100	200	200	0.67 U	0.66 U	1.4 U	NA	0.59 U	NA	0.66 U	0.68 U	3.8 U	2.0 U	0.61 U	**0.65 U**	3.65 U	0.69 U	**20**	1.1 U	0.59 U
	Vanadium	400	400	700	700	**90**	**73**	**140**	NA	**10**	NA	**68**	**93**	**300**	**39**	**28**	**39**	**295**	**140**	**150**	**120**	**14**
	Zinc	1,000	1,000	3,000	3,000	**870**	**1,000**	**840**	NA	**29**	NA	**910**	**1,200**	**990**	**160**	**310**	**420**	**1,500**	**2,500**	**1,900**	**1,600**	**20**

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-25		SB-NM-26			SB-NM-27			SB-NM-28			SB-NM-28		SB-NM-29				SB-NM-30	SB-NM-31	SB-NM-32
		Sample Depth (ft.):				0-1	1-3	0-1	1-3	5-7	0-1	1-3	5-7	0-1	1-3	5-7	0-1	1-3	0-1	1-3	5-7	13-14	0-1	0-1	0-1
		Sample Date:				06/10/2011	06/10/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011	3/24/2011 combo	06/08/2011	06/08/2011 combo	3/24/2011	3/24/2011	3/24/2011	3/24/2011	4/1/2011	4/1/2011	4/1/2011
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																				
VOCs																									
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10	30	10	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VPH																									
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	40	500	40	1,000	NA	NA	0.23 U	0.85 U	**5.5**	0.39 U	0.49 U	0.48 U	**0.94**	0.41 U	**2.9**	NA	NA	2.0 U	**18**	0.41 U	2.3 U	**0.40**	0.35 U	0.29 U
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Xylenes	300	500	300	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH																									
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																									
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	NA	NA	**0.25**	0.85 U	**10**	0.39 U	0.49 U	0.48 U	**1.6**	0.41 U	**2.7**	NA	NA	**2.2**	**26**	0.41 U	2.3 U	0.33 U	0.35 U	0.29 U
	Acenaphthylene	600	10	600	10	NA	NA	**0.36**	0.85 U	2.1 U	0.39 U	0.49 U	0.48 U	0.86 U	0.41 U	1.32 U	NA	NA	2.0 U	4.3 U	0.41 U	2.3 U	0.33 U	0.35 U	0.29 U
	Anthracene	1,000	1,000	3,000	3,000	NA	NA	**0.66**	0.85 U	**27**	**0.53**	0.49 U	**0.92**	**3.9**	**0.59**	**12**	NA	NA	**4.7**	**47**	**1.0**	**5.6**	**0.45**	0.35 U	0.29 U
	Benzo(a)anthracene	7	7	40	40	NA	NA	**1.8**	**1.7**	**41**	**1.9**	**3.7**	**2.6**	**10**	**2.0**	**21**	NA	NA	**12**	**120**	**4.0**	**11**	**1.5**	0.35 U	**0.60**
	Benzo(a)pyrene	2	2	4	4	NA	NA	**1.9**	**1.6**	**34**	**1.9**	**3.6**	**2.4**	**8.2**	**2.0**	**21**	NA	NA	**12**	**84**	**3.6**	**9.7**	**1.4**	0.35 U	**0.50**
	Benzo(b)fluoranthene	7	7	40	40	NA	NA	**2.4**	**2.3**	**46**	**2.4**	**4.8**	**3.0**	**11**	**2.5**	**24**	NA	NA	**14**	**110**	**4.2**	**11**	**1.7**	0.35 U	**0.63**
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	NA	NA	**0.98**	0.85 U	**15**	**0.93**	**1.7**	**1.2**	**3.3**	**1.1**	**11**	NA	NA	**9.8**	**44**	**1.6**	**6.2**	**0.61**	0.35 U	0.29 U
	Benzo(k)fluoranthene	70	70	400	400	NA	NA	**0.88**	0.85 U	**17**	**0.91**	**1.9**	**1.1**	**4.5**	**0.86**	**8.8**	NA	NA	**5.3**	**38**	**1.6**	**4.4**	**0.72**	0.35 U	0.29 U
	Chrysene	70	70	400	400	NA	NA	**1.9**	**1.7**	**40**	**2.0**	**3.7**	**2.5**	**10**	**2.1**	**19**	NA	NA	**13**	**130**	**4.0**	**10**	**1.7**	0.35 U	**0.61**
	Dibenz(a,h)anthracene	0.7	0.7	4	4	NA	NA	**0.23**	0.85 U	**5.4**	**0.40**	**0.54**	**0.50**	**0.92**	0.41 U	**4.1**	NA	NA	**2.6**	**15**	**0.53**	2.3 U	0.33 U	0.35 U	0.29 U
	Fluoranthene	1,000	1,000	3,000	3,000	NA	NA	**3.6**	**3.0**	**100**	**2.9**	**6.4**	**5.2**	**19**	**3.0**	**48**	NA	NA	**17**	**290**	**5.3**	**19**	**3.4**	**0.43**	**1.4**
	Fluorene	1,000	1,000	3,000	3,000	NA	NA	**0.29**	0.85 U	**14**	0.39 U	**0.53**	0.48 U	**1.6**	0.41 U	**5.3**	NA	NA	**2.3**	**29**	**0.47**	**3.0**	0.33 U	0.35 U	0.29 U
	Indeno(1,2,3-cd)pyrene	7	7	40	40	NA	NA	**1.1**	**1.3**	**18**	**1.3**	**2.0**	**1.5**	**4.0**	**1.3**	**14**	NA	NA	**10**	**53**	**2.0**	**6.9**	**0.73**	0.35 U	0.29 U
	2-Methylnaphthalene	80	300	80	500	NA	NA	0.23 U	0.85 U	**4.0**	0.39 U	0.49 U	0.48 U	0.86 U	0.41 U	1.32 U	NA	NA	2.0 U	**8.6**	0.41 U	2.3 U	**0.54**	0.35 U	0.29 U
	Phenanthrene	500	500	1,000	1,000	NA	NA	**3.2**	**2.6**	**130**	**2.1**	**5.4**	**3.7**	**16**	**2.6**	**44**	NA	NA	**20**	**250**	**4.2**	**27**	**3.4**	0.35 U	**0.98**
	Pyrene	1,000	1,000	3,000	3,000	NA	NA	**2.6**	**2.1**	**79**	**2.9**	**4.6**	**3.6**	**14**	**2.9**	**38**	NA	NA	**23**	**260**	**5.8**	**22**	**2.4**	0.35 U	**0.87**
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																									
(mg/kg)	Total PCBs	1	1	4	4	**16.2**	**33.6**	**31.8 J**	**52.1 J**	**3.31 J**	**10.59 J**	**6.36 J**	**13.99 J**	**7.39 J**	**1.883 J**	**6.805 J**	**5.5**	**11.6**	**16.61 J**	**24.47 J**	**38.3 J**	**2.00 J**	**14.44 J**	**1.057 J**	**1.848 J**
TEQ Summation^																									
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	**3.3E-04**	**6.4E-04**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.2E-04**	**1.3E-04**	NA	NA	NA	NA	NA	NA	NA
Metals, total																									
(mg/kg)	Antimony	20	20	30	30	NA	NA	3.4 U	3.1 U	3.1 U	3.0 U	3.5 U	3.6 U	3.2 U	2.8 U	3.25 U	NA	NA	2.9 U	3.2 U	3.1 U	8.3 U	4.7 U	5.2 U	3.9 U
	Arsenic	20	20	20	20	NA	NA	**6.0**	**10**	**17**	**4.8**	**11**	**20**	**8.3**	**10**	**18.5**	NA	NA	**8.6**	**20**	**13**	**9.9**	**7.9**	**5.8**	**6.1**
	Barium	1,000	1,000	3,000	3,000	NA	NA	**880**	**1,200**	**560**	**560**	**1,100**	**1,600**	**1,100**	**430**	**560**	NA	NA	**850**	**1,400**	**770**	**720**	**650**	**96**	**260**
	Beryllium	90	90	200	200	NA	NA	0.34 U	0.31 U	0.31 U	0.30 U	0.35 U	0.36 U	0.32 U	0.28 U	0.325 U	NA	NA	0.29 U	**0.35**	0.31 U	0.83 U	0.47 U	0.52 U	0.39 U
	Cadmium	70	70	100	100	NA	NA	**2.7**	**3.7**	**2.2**	**1.6**	**3.6**	**4.5**	**13**	**1.7**	**5.05**	NA	NA	**3.7**	**5.3**	**4.1**	**1.2**	**1.9**	0.52 U	**0.80**
	Chromium (III)	1,000	1,000	3,000	3,000	NA	NA	**65**	**110**	**45**	**270**	**80**	**99**	**87**	**34**	**43**	NA	NA	**57**	**71**	**62**	**24**	**85**	**16**	**28**
	Chromium (VI)	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	200	200	600	600	NA	NA	**720**	**1,100**	**11,000**	**570**	**1,000**	**1,300**	**730**	**600**	**2,550**	NA	NA	**1,100**	**1,200**	**1,800**	**620**	**550**	**78**	**220**
	Mercury	20	20	30	30	NA	NA	0.031 U	**0.99**	**1.8**	**0.71**	**1.2**	**1.9**	**1.6**	**0.90**	**3**	NA	NA	**1.2**	**11**	**3.8**	**0.25**	**0.96**	**0.16**	**0.46**
	Nickel	600	600	1000	1000	NA	NA	**23**	**40**	**64**	**23**	**39**	**68**	**37**	**22**	**46.5**	NA	NA	**26**	**45**	**28**	**24**	**22**	**8.4**	**14**
	Selenium	400	400	700	700	NA	NA	6.7 U	6.3 U	31 U	6.0 U	7.1 U	7.2 U	6.3 U	5.7 U	19.35 U	NA	NA	5.9 U	6.4 U	6.1 U	17 U	9.5 U	10 U	7.9 U
	Silver	100	100	200	200	NA	NA	0.67 U	**15**	0.61 U	0.60 U	0.71 U	0.72 U	0.63 U	0.57 U	0.65 U	NA	NA	0.59 U	**16**	0.61 U	1.7 U	0.95 U	1.0 U	0.79 U
	Vanadium	400	400	700	700	NA	NA	**100**	**97**	**23**	**110**	**58**	**60**	**49**	**32**	**30.5**	NA	NA	**46**	**61**	**43**	**26**	**58**	**27**	**37**
	Zinc	1,000	1,000	3,000	3,000	NA	NA	**460**	**1,400**	**580**	**320**	**930**	**920**	**930**	**520**	**1,250**	NA	NA	**750**	**980**	**880**	**190**	**390**	**73**	**150**

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				SB-NM-33		SB-NM-34A	SB-NM-35	SB-NM-36		SB-NM-37	SB-NM-38		TRC TP-1			TRC TP-2	TRC TP-4	TRC TP-5		TRC TP-6	TRC TP-7	TRC TP-9	
		Sample Depth (ft.):				0-1	1-3	0-1	0-1	0-1	1-3	0-1	0-1	1-3	8	8-9	9	9.5	5-7	3-5	5-8	4-5	0-3	3-5	5-7
		Sample Date:				06/08/2011	06/08/2011	6/10/2011	6/10/2011	6/10/2011	6/10/2011 combo	6/10/2011	7/6/2011	7/6/2011	10/25/2010	10/25/2010	10/25/2010	10/26/2010	10/27/2010	10/27/2010	10/27/2010	10/28/2010	10/28/2010	10/29/2010	10/29/2010
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																				
VOCs																									
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0090 U	0.0060 U	0.0068 U	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0045 U	0.0030 U	0.0034 U	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0090 U	0.0060 U	0.0068 U	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0045 U	0.0030 U	0.0034 U	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0045 U	0.0030 U	0.0034 U	NA
	Tetrachloroethylene	10	30	10	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0045 U	0.0030 U	0.0034 U	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0045 U	0.0030 U	0.0034 U	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0045 U	**0.0084**	0.0034 U	NA
VPH																									
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33 U	**25**	35 U	NA
	C9-C10 Aromatics	100	100	500	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33 U	**25**	35 U	NA
	Ethylbenzene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.21**	**3.8**	0.0034 U	NA
	Naphthalene	40	500	40	1,000	NA	NA	NA	0.25 U	0.37 U	0.465 U	0.20 U	0.39 U	0.38 U	NA	NA	NA	NA	0.26 U	NA	0.57 U	0.023 U	**2.9**	**2.9**	**5.6**
	Toluene	500	500	1,000	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0045 U	**1.5**	0.0034 U	NA
	Xylenes	300	500	300	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.59**	**20**	**0.35**	NA
EPH																									
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26 U	NA	57 U	63 U	**18**	63 U	63 U
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**180**	NA	**380**	**760**	**41**	**580**	**560**
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**180**	NA	**310**	**370**	**460**	**840**	**780**
SVOCs																									
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	1,000	1,000	3,000	3,000	NA	NA	NA	0.25 U	0.37 U	**0.355 J**	**0.22**	0.39 U	0.38 U	NA	NA	NA	NA	**0.45**	NA	**0.71**	**0.65**	**6.1**	**6.3**	**8.2**
	Acenaphthylene	600	10	600	10	NA	NA	NA	0.25 U	0.37 U	0.465 U	0.20 U	0.39 U	0.38 U	NA	NA	NA	NA	0.26 U	NA	0.57 U	0.63 U	**0.51**	0.63 U	0.63 U
	Anthracene	1,000	1,000	3,000	3,000	NA	NA	NA	0.25 U	**0.44**	**1.4**	**0.59**	0.39 U	0.38 U	NA	NA	NA	NA	**0.82**	NA	**1.9**	**1.7**	**10**	**22**	**22**
	Benzo(a)anthracene	7	7	40	40	NA	NA	NA	**0.35**	**1.2**	**3.4**	**1.2**	**0.59**	0.38 U	NA	NA	NA	NA	**1.6**	NA	**5.3**	**2.5**	**22**	**37**	**28**
	Benzo(a)pyrene	2	2	4	4	NA	NA	NA	**0.33**	**1.0**	**2.5**	**0.96**	**0.60**	0.38 U	NA	NA	NA	NA	**2.4**	NA	**4.6**	**2.4**	**17**	**25**	**23**
	Benzo(b)fluoranthene	7	7	40	40	NA	NA	NA	**0.46**	**1.3**	**3.6**	**1.3**	**0.95**	**0.40**	NA	NA	NA	NA	**2.1**	NA	**6.5**	**3.3**	**25**	**36**	**30**
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	NA	NA	NA	0.25 U	**0.59**	**0.99**	**0.80**	0.39 U	0.38 U	NA	NA	NA	NA	**1.0**	NA	**2.9**	**1.9**	**11**	**13**	**14**
	Benzo(k)fluoranthene	70	70	400	400	NA	NA	NA	0.25 U	**0.49**	**1.2**	**0.46**	**0.40**	0.38 U	NA	NA	NA	NA	**0.62**	NA	**2.4**	**1.1**	**9.1**	**14**	**12**
	Chrysene	70	70	400	400	NA	NA	NA	**0.41**	**1.2**	**3.3**	**1.2**	**0.73**	0.38 U	NA	NA	NA	NA	**1.8**	NA	**5.5**	**2.6**	**25**	**36**	**28**
	Dibenz(a,h)anthracene	0.7	0.7	4	4	NA	NA	NA	0.25 U	0.37 U	0.465 U	**0.23**	0.39 U	0.38 U	NA	NA	NA	NA	**0.31**	NA	**0.99**	0.63 U	**3.5**	**5.8**	**6.1**
	Fluoranthene	1,000	1,000	3,000	3,000	NA	NA	NA	**0.75**	**2.1**	**5.7**	**2.6**	**1.3**	**0.60**	NA	NA	NA	NA	**3.9**	NA	**12**	**7.3**	**57**	**82**	**64**
	Fluorene	1,000	1,000	3,000	3,000	NA	NA	NA	0.25 U	0.37 U	**0.46 J**	**0.28**	0.39 U	0.38 U	NA	NA	NA	NA	**0.47**	NA	**1.1**	**0.84**	**7.0**	**13**	**13**
	Indeno(1,2,3-cd)pyrene	7	7	40	40	NA	NA	NA	**0.26**	**0.72**	**1.25**	**0.91**	0.39 U	0.38 U	NA	NA	NA	NA	**0.95**	NA	**3.3**	**1.8**	**11**	**15**	**15**
	2-Methylnaphthalene	80	300	80	500	NA	NA	NA	0.25 U	0.37 U	0.465 U	0.20 U	0.39 U	0.38 U	NA	NA	NA	NA	0.26 U	NA	0.57 U	0.63 U	**1.5**	**2.2**	**3.5**
	Phenanthrene	500	500	1,000	1,000	NA	NA	NA	**0.49**	**1.8**	**5.3**	**2.5**	**0.90**	**0.61**	NA	NA	NA	NA	**3.7**	NA	**7.5**	**5.1**	**54**	**82**	**74**
	Pyrene	1,000	1,000	3,000	3,000	NA	NA	NA	**0.60**	**2.3**	**5.3**	**2.4**	**0.85**	0.38 U	NA	NA	NA	NA	**3.9**	NA	**12**	**6.6**	**54**	**75**	**60**
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																									
(mg/kg)	Total PCBs	1	1	4	4	**20.6**	**1.9**	**1.1**	**0.34**	**8.7**	**14**	**3.0**	**0.32**	**1.1**	0.0595 U	**1.423 J**	**1.585 J**	**0.933 J**	NA	**8.0**	NA	**61**	NA	**26**	NA
TEQ Summation^																									
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	**4.8E-04**	**7.4E-05**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																									
(mg/kg)	Antimony	20	20	30	30	NA	NA	NA	3.7 U	2.8 U	3.4 U	3.0 U	2.8 U	2.6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	20	20	20	20	NA	NA	NA	**5.3**	**4.8**	**12**	**3.6**	2.8 U	2.6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	1,000	1,000	3,000	3,000	NA	NA	NA	**54**	**680**	**1,050**	**100**	**36**	**40**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	90	90	200	200	NA	NA	NA	0.37 U	0.28 U	0.34 U	0.30 U	0.28 U	0.26 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	70	70	100	100	NA	NA	NA	**0.46**	**1.7**	**3.1**	**0.74**	**0.31**	0.26 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium (III)	1,000	1,000	3,000	3,000	NA	NA	NA	**13**	**67**	**89**	**35**	**11**	**10**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium (VI)	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	200	200	600	600	NA	NA	NA	**50**	**480**	**740**	**220**	**41**	**47**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	20	20	30	30	NA	NA	NA	**0.19**	**0.82**	**1.3**	**0.38**	**0.064**	**0.13**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Nickel	600	600	1000	1000	NA	NA	NA	**7.3**	**17**	**25.5**	**9.7**	**7.7**	**7.5**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	400	400	700	700	NA	NA	NA	7.4 U	5.6 U	10.4 U	5.9 U	5.6 U	5.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	100	100	200	200	NA	NA	NA	0.74 U	0.56 U	0.68 U	0.59 U	0.56 U	0.52 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium	400	400	700	700	NA	NA	NA	**20**	**59**	**78**	**32**	**13**	**11**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	1,000	1,000	3,000	3,000	NA	NA	NA	**57**	**360**	**1,550**	**320**	**46**	**41**	NA	NA	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.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 1. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:				TRC TP-11	TRC TP-14			TRC TP-15			TRC TP-16			TRC TP-21	TRC TP-22			SB NM 40	SB NM 41	SB NM 42	SB NM 43	P-021-EW1	P-029_EW1	P-029-EW2
		Sample Depth (ft.):				7-9	0-1	1-3	3-5	3-5	5-7	7-9	0-1	1-3	3-5	7-9	0-1	1-3	3-5	0-1.5	0-1.5	0-1.5	0-1	0-3	0-3	0-3
		Sample Date:				11/1/2010	11/2/2010	11/2/2010	11/2/2010	11/3/2010	11/3/2010	11/3/2010	11/3/2010	11/3/2010	11/3/2010	11/16/2010	11/17/2010	11/17/2010	11/17/2010	6/1/2012	6/1/2012	6/1/2012	6/1/2012 combo	12/15/2010	11/23/2010	12/15/2010
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3																					
VOCs																										
(mg/kg)	n-Butylbenzene	100(1)	100(1)	500(1)	500(1)	0.0037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0016 U	0.0017 U	0.0017 U	0.00175 U	NA	NA	NA
	sec-Butylbenzene	100(1)	100(1)	500(1)	500(1)	0.0019 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0016 U	0.0017 U	0.0017 U	0.00175 U	NA	NA	NA
	Isopropylbenzene (Cumene)	100(1)	100(1)	500(1)	500(1)	0.0037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0016 U	0.0017 U	0.0017 U	0.00175 U	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	500(1)	500(1)	0.0019 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0031 U	0.0035 U	0.0034 U	0.0035 U	NA	NA	NA
	n-Propylbenzene	100(1)	100(1)	500(1)	500(1)	0.0019 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0016 U	0.0017 U	0.0017 U	0.00175 U	NA	NA	NA
	Tetrachloroethylene	10	30	10	200	0.0019 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0016 U	0.0017 U	0.0017 U	0.00175 U	NA	NA	NA
	1,2,4-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	**0.011**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0016 U	0.0017 U	0.0017 U	0.00175 U	NA	NA	NA
	1,3,5-Trimethylbenzene	100(1)	100(1)	500(1)	500(1)	**0.0025**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0016 U	0.0017 U	0.0017 U	0.00175 U	NA	NA	NA
VPH																										
(mg/kg)	C9-C12 Aliphatics	1,000	1,000	3,000	3,000	**29**	NA	NA	NA	NA	NA	NA	NA	NA	NA	28 U	NA	NA	NA	19 U	18 U	18 U	15 U	NA	NA	NA
	C9-C10 Aromatics	100	100	500	500	**32**	NA	NA	NA	NA	NA	NA	NA	NA	NA	28 U	NA	NA	NA	19 U	18 U	18 U	15 U	NA	NA	NA
	Ethylbenzene	500	500	1,000	1,000	**0.13**	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.14 U	NA	NA	NA	0.094 U	0.090 U	0.091 U	0.075 U	NA	NA	NA
	Naphthalene	40	500	40	1,000	**0.74**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.94**	NA	NA	NA	0.0031 U	0.0035 U	0.0034 U	**0.33 J**	**4.7**	**4.4**	**5.8**
	Toluene	500	500	1,000	1,000	0.0019 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.14 U	NA	NA	NA	0.094 U	0.090 U	0.091 U	0.075 U	NA	NA	NA
	Xylenes	300	500	300	1,000	**0.67**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.67**	NA	NA	NA	0.19 U	0.18 U	0.18 U	0.15 U	NA	NA	NA
EPH																										
(mg/kg)	C9-C18 Aliphatics	1,000	1,000	3,000	3,000	**66**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**29**	NA	NA	NA	25 U	24 U	66 U	99 U	NA	NA	NA
	C19-C36 Aliphatics	3,000	3,000	5,000	5,000	**810**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**540**	NA	NA	NA	25 U	24 U	66 U	99 U	NA	NA	NA
	C11-C22 Aromatics	1,000	1,000	3,000	3,000	**360**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**610**	NA	NA	NA	**65**	24 U	**160**	**165**	NA	NA	NA
SVOCs																										
(mg/kg)	Phenol	50	20	50	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.83 U	0.42 U	0.89 U	0.78 U	NA	1.40 U	NA
	2-Methylphenol	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.83 U	0.42 U	0.89 U	0.78 U	NA	1.40 U	NA
	4-Methylphenol	200*	5*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dimethylphenol	100	500	100	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.83 U	0.42 U	0.89 U	0.78 U	NA	1.40 U	NA
	2,4-Dinitrotoluene	2	2	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.83 U	0.42 U	0.89 U	0.78 U	NA	1.40 U	NA
	Di-n-butylphthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.83 U	0.42 U	0.89 U	0.78 U	NA	1.40 U	NA
	Butyl benzyl phthalate	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.6 U	0.81 U	1.7 U	1.5 U	NA	1.40 U	NA
	bis(2-Ethylhexyl)phthalate	200	200	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.83 U	0.42 U	0.89 U	0.78 U	NA	**3.2**	NA
	Dibenzofuran	10*	10*	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.83 U	0.42 U	0.89 U	0.78 U	NA	**7.7**	NA
	Acenaphthene	1,000	1,000	3,000	3,000	**0.50**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.8**	NA	NA	NA	**1.0**	0.21 U	**2.3**	**1.65**	**10**	**11**	**29**
	Acenaphthylene	600	10	600	10	**0.66**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.20**	NA	NA	NA	0.25 U	0.21 U	0.44 U	0.39 U	**0.65**	1.40 U	2.7 U
	Anthracene	1,000	1,000	3,000	3,000	**2.3**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**7.3**	NA	NA	NA	**1.6**	0.21 U	**2.2**	**1.85**	**19**	**23**	**71**
	Benzo(a)anthracene	7	7	40	40	**6.0**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**14**	NA	NA	NA	**6.1**	**0.52**	**7.6**	**5.5**	**36**	**103**	**220**
	Benzo(a)pyrene	2	2	4	4	**5.8**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**10**	NA	NA	NA	**5.5**	**0.50**	**5.9**	**4.6**	**39**	**92**	**210**
	Benzo(b)fluoranthene	7	7	40	40	**7.2**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**15**	NA	NA	NA	**7.1**	**0.63**	**8.5**	**6.45**	**32**	**88.6**	**190**
	Benzo(g,h,i)perylene	1,000	1,000	3,000	3,000	**3.6**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**7.0**	NA	NA	NA	**2.3**	**0.29**	**3.4**	**2.8**	**28**	**26**	**150**
	Benzo(k)fluoranthene	70	70	400	400	**2.7**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5.5**	NA	NA	NA	**2.7**	**0.27**	**3.6**	**2.65**	**40**	**45**	**55**
	Chrysene	70	70	400	400	**6.2**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**13**	NA	NA	NA	**6.3**	**0.56**	**8.0**	**5.65**	**36**	**109**	**220**
	Dibenz(a,h)anthracene	0.7	0.7	4	4	**1.0**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.1**	NA	NA	NA	**0.64**	0.21 U	**1.2**	**0.94**	**7.1**	1.40 U	**15**
	Fluoranthene	1,000	1,000	3,000	3,000	**14**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**34**	NA	NA	NA	**13**	**1.1**	**17**	**12**	**84**	**257**	**510**
	Fluorene	1,000	1,000	3,000	3,000	**0.83**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3.8**	NA	NA	NA	**0.70**	0.21 U	**1.1**	**0.87**	**8.8**	**11**	**21**
	Indeno(1,2,3-cd)pyrene	7	7	40	40	**3.6**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**7.5**	NA	NA	NA	**3.2**	**0.32**	**3.6**	**2.75**	**27**	**29**	**140**
	2-Methylnaphthalene	80	300	80	500	0.24 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.48**	NA	NA	NA	0.25 U	0.21 U	0.44 U	0.39 U	NA	**2.4**	NA
	Phenanthrene	500	500	1,000	1,000	**9.7**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**30**	NA	NA	NA	**9.3**	**0.62**	**12**	**8.9**	**63**	**174**	**320**
	Pyrene	1,000	1,000	3,000	3,000	**13**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**31**	NA	NA	NA	**9.0**	**0.98**	**15**	**10.9**	**65**	**200**	**380**
	3-Methylcholanthrene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.60**	NA
	Carbazole	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**19**	NA
	1-Methylnaphthalene	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.70**	NA
PCBs																										
(mg/kg)	Total PCBs	1	1	4	4	**11**	**16**	**50**	**17**	**4.3**	**1.9**	**5.3**	**27**	**23**	**14**	NA	**21**	**6.1**	**2.5**	**0.19**	**0.32**	**0.17**	**0.20**	5.0 U	10 U	20 U
TEQ Summation^																										
(mg/kg)	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	5.0E-05	5.0E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																										
(mg/kg)	Antimony	20	20	30	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.9 U	2.9 U	3.2 U	2.85 U	NA	NA	NA
	Arsenic	20	20	20	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14 U	15 U	15 U
	Barium	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**110**	**86**	**70**	**58**	**334**	**398**	**255**
	Beryllium	90	90	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	70	70	100	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.50**	**0.56**	**0.56**	**0.315**	8.0 U	8.0 U	8.0 U
	Chromium (III)	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**13**	**14**	**15**	**15.5**	**25**	**17**	28 U
	Chromium (VI)	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	200	200	600	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**290**	**370**	**250**	**145**	**271**	**312**	**336**
	Mercury	20	20	30	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.38**	**0.13**	**0.19**	**0.205**	NA	NA	NA
	Nickel	600	600	1000	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Selenium	400	400	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.8 U	5.8 U	6.3 U	5.7 U	NA	NA	NA
	Silver	100	100	200	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.58 U	**0.61**	0.63 U	0.57 U	NA	NA	NA
	Vanadium	400	400	700	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	1,000	1,000	3,000	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
ND - Not detected.
NS - No MassDEP standards exist for this analyte.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
R - Rejected data point due to matrix spike recoveries <10%.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
VPH - Volatile Petroleum Hydrocarbons.
EPH - Extractable Petroleum Hydrocarbons.
PCBs - Polychlorinated Biphenyls.
EMPCs - Estimated Maximum Possible Concentrations.
TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.
(1) - MCP Method 1 standards and RC for C9-C10 aromatics used.
* - TRC developed standards.
^ - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.

Table 2. Summary Statistics for Soil Samples -- 0-15' bgs
Nemasket Street Lots
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-2	S-1/GW-3	UCL*	Background	# of Samples	# of Detects	Freq. of Detects	Min. of Detects (mg/kg)	Max. of Detects (mg/kg)	Location of Max. Detected	Min. of Non-Detects (mg/kg)	Max. of Non-Detects (mg/kg)	Mean Concentration (mg/kg)	EPC (mg/kg)	EPC Rationale
VOCs																
	n-Butylbenzene	100(1)	100(1)	5,000(1)	NA	13	2	15.4%	0.015	67	SB-NM-7	0.0016	0.6	5.2E+00	6.7E+01	Maximum detect
	sec-Butylbenzene	100(1)	100(1)	5,000(1)	NA	13	2	15.4%	0.0055	22	SB-NM-7	0.0016	0.6	1.7E+00	2.2E+01	Maximum detect
	Isopropylbenzene (Cumene)	100(1)	100(1)	5,000(1)	NA	13	1	7.7%	5	5	SB-NM-7	0.0016	1.2	4.3E-01	5.0E+00	Maximum detect
	p-Isopropyltoluene (p-Cymene)	100(1)	100(1)	5,000(1)	NA	13	2	15.4%	0.0093	37	SB-NM-7	0.0019	0.6	2.9E+00	3.7E+01	Maximum detect
	n-Propylbenzene	100(1)	100(1)	5,000(1)	NA	13	1	7.7%	10	10	SB-NM-7	0.0016	0.6	7.9E-01	1.0E+01	Maximum detect
	Tetrachloroethylene	10	30	10,000	NA	13	1	7.7%	0.0073	0.0073	SB-NM-7A	0.0016	3.4	1.6E-01	7.3E-03	Maximum detect
	1,2,4-Trimethylbenzene	100(1)	100(1)	5,000(1)	NA	13	4	30.8%	0.011	150	SB-NM-7	0.0016	0.0045	1.2E+01	1.5E+02	Maximum detect
	1,3,5-Trimethylbenzene	100(1)	100(1)	5,000(1)	NA	13	4	30.8%	0.0025	250	SB-NM-7	0.0016	2.4	1.9E+01	2.5E+02	Maximum detect
VPH																
	C9-C12 Aliphatics	1,000	1,000	20,000	NA	9	2	22.2%	25	29	TRC TP-11	15	35	1.5E+01	1.5E+01	Mean
	C9-C10 Aromatics	100	100	5,000	NA	9	2	22.2%	25	32	TRC TP-11	15	35	1.6E+01	1.6E+01	Mean
	Ethylbenzene	500	500	10,000	NA	14	3	21.4%	0.13	3.8	TRC TP-7	0.00205	3.4	4.6E-01	4.6E-01	Mean
	Naphthalene	20	500	10,000	NA	165	53	32.1%	0.015	180	SB-NM-15	0.0031	4.3	2.5E+00	1.8E+02	Maximum detect
	Toluene	500	500	10,000	NA	14	1	7.1%	1.5	1.5	TRC TP-7	0.0019	3.4	2.7E-01	2.7E-01	Mean
	Xylenes	100	500	10,000	NA	14	6	42.9%	0.35	19.5	TRC TP-7	0.0041	1.2	1.9E+00	1.9E+00	Mean
EPH																
	C9-C18 Aliphatics	1,000	1,000	20,000	NA	12	3	25.0%	18	66	TRC TP-11	24	99	3.0E+01	3.0E+01	Mean
	C19-C36 Aliphatics	3,000	3,000	20,000	NA	12	8	66.7%	41	810	TRC TP-11	24	99	3.3E+02	3.3E+02	Mean
	C11-C22 Aromatics	1,000	1,000	10,000	NA	12	11	91.7%	65	840	TRC TP-9	24	24	3.6E+02	3.6E+02	Mean
SVOCs																
	Phenol	50	20	10,000	NA	6	1	16.7%	0.42	0.42	Bethel-4	0.42	1.4	4.3E-01	4.2E-01	Maximum detect
	2-Methylphenol	NS	NS	NS	NA	6	1	16.7%	0.19	0.19	Bethel-4	0.42	1.4	3.9E-01	1.9E-01	Maximum detect
	4-Methylphenol	200*	5*	NS	NA	2	2	100.0%	0.075	0.7	Bethel-4	--	--	3.9E-01	7.0E-01	Maximum detect
	2,4-Dimethylphenol	100	500	10,000	NA	8	1	12.5%	0.26	0.26	Bethel-2	0.42	8.45	9.0E-01	2.6E-01	Maximum detect
	2,4-Dinitrotoluene	2	2	800	NA	8	1	12.5%	0.63	0.63	Bethel-4	0.42	2.05	5.5E-01	5.5E-01	Mean
	Di-n-butylphthalate	NS	NS	NS	NA	8	3	37.5%	0.73	6	Bethel-3	0.42	1.4	1.5E+00	6.0E+00	Maximum detect
	Butyl benzyl phthalate	NS	NS	NS	NA	6	1	16.7%	0.067	0.067	Bethel-3	0.81	1.7	6.0E-01	6.7E-02	Maximum detect
	bis(2-Ethylhexyl)phthalate	90	90	10,000	NA	8	4	50.0%	1.3	3.7	Bethel-1	0.42	0.89	1.6E+00	1.6E+00	Mean
	Dibenzofuran	10*	10*	NS	NA	11	7	63.6%	0.15	14	Bethel-2	0.42	0.89	3.8E+00	1.4E+01	Maximum detect
	Acenaphthene	1,000	1,000	10,000	0.5	160	64	40.0%	0.11	29	Bethel-2	0.19	4.3	1.8E+00	1.8E+00	Mean
	Acenaphthylene	600	10	10,000	0.5	160	26	16.2%	0.091	13	Bethel-2	0.088	4.3	6.6E-01	6.6E-01	Mean
	Anthracene	1,000	1,000	10,000	1	162	117	72.2%	0.23	71	P-029-EW2	0.19	4.3	4.3E+00	4.3E+00	Mean
	Benzo(a)anthracene	7	7	3,000	2	162	140	86.4%	0.22	220	P-029-EW2	0.19	3.6	9.8E+00	1.3E+01	95% H-UCL
	Benzo(a)pyrene	2	2	300	2	162	141	87.0%	0.25	210	P-029-EW2	0.19	3.6	8.4E+00	1.1E+01	95% H-UCL
	Benzo(b)fluoranthene	7	7	3,000	2	162	145	89.5%	0.32	190	P-029-EW2	0.19	3.6	1.0E+01	1.5E+01	95% H-UCL
	Benzo(g,h,i)perylene	1,000	1,000	10,000	1	161	125	77.6%	0.23	150	P-029-EW2	0.19	4.3	4.2E+00	4.2E+00	Mean
	Benzo(k)fluoranthene	70	70	10,000	1	161	127	78.9%	0.23	55	P-029-EW2	0.19	4.3	3.8E+00	3.8E+00	Mean
	Chrysene	70	70	10,000	2	162	141	87.0%	0.23	220	P-029-EW2	0.19	3.6	9.5E+00	9.5E+00	Mean
	Dibenz(a,h)anthracene	0.7	0.7	300	0.5	160	65	40.6%	0.1825	15	SB-NM-29	0.088	4.3	1.1E+00	1.8E+00	95% Chebyshev (Mean, Sd) UCL
	Fluoranthene	1,000	1,000	10,000	4	161	147	91.3%	0.19	510	P-029-EW2	0.2	1.6	2.1E+01	2.1E+01	Mean
	Fluorene	1,000	1,000	10,000	1	159	78	49.1%	0.089	29	SB-NM-29	0.19	4.3	2.1E+00	2.1E+00	Mean
	Indeno(1,2,3-cd)pyrene	7	7	3000	1	161	133	82.6%	0.21	140	P-029-EW2	0.19	4.3	4.9E+00	5.8E+00	95% H-UCL
	2-Methylnaphthalene	80	300	5,000	0.5	157	32	20.4%	0.089	9	NM-ROW-3	0.088	4.3	7.2E-01	7.2E-01	Mean
	Phenanthrene	500	500	10,000	3	162	146	90.1%	0.22	320	SB-NM-29	0.19	1.6	1.9E+01	1.9E+01	Mean
	Pyrene	1,000	1,000	10,000	4	162	144	88.9%	0.28	380	SB-NM-29	0.11	3.6	1.8E+01	1.8E+01	Mean
	3-Methylcholanthrene	NS	NS	NS	NA	1	1	100.0%	1.60	1.60	P-029-EW1	--	--	1.6E+00	1.6E+00	Maximum detect
	Carbazole	NS	NS	NS	NA	1	1	100.0%	19	19	P-029-EW1	--	--	1.9E+01	1.9E+01	Maximum detect
	1-Methylnaphthalene	NS	NS	NS	NA	1	1	100.0%	1.70	1.70	P-029-EW1	--	--	1.7E+00	1.7E+00	Maximum detect
PCBs																
	Total PCBs	1	1	100	NA	205	198	96.6%	0.0742	736.4	SB-NM-3	0.0586	20	2.7E+01	5.0E+01	95% Chebyshev (Mean, Sd) UCL
TEQ Summation^																
	TEQs (ND=DL/2; EMPC=EMPC)	2.0E-05	2.0E-05	3.0E-03	NA	20	20	100.0%	6.4E-05	1.1E-03	SB-NM-19	--	--	3.8E-04	4.8E-04	95% Student's-t UCL
Metals, total																
	Antimony	20	20	300	1	141	24	17.0%	3.075	310	SB-NM-19	2.6	12	5.7E+00	1.5E+01	95% Chebyshev (Mean, Sd) UCL
	Arsenic	20	20	500	20	150	122	81.3%	1.81	33	Bethel-4	2.6	15	1.0E+01	1.0E+01	Mean
	Barium	1,000	1,000	10,000	50	154	154	100.0%	15	7500	SB-NM-25	--	--	1.1E+03	1.2E+03	95% Approximate Gamma UCL
	Beryllium	90	90	2,000	0.4	137	47	34.3%	0.2625	2.7	SB-NM-13	0.26	1.2	4.6E-01	4.6E-01	Mean
	Cadmium	70	70	1000	2	155	139	89.7%	0.3	43	Bethel-4	0.26	8	3.8E+00	3.8E+00	Mean
	Chromium (III)	1,000	1,000	10,000	30	160	159	99.4%	2.8	740	SB-NM-6	28	28	1.1E+02	1.1E+02	Mean
	Chromium (VI)	100	100	2000	30	4	4	100.0%	7.85	26	SB-NM-7	--	--	1.6E+01	NA	Below background
	Lead	200	200	6,000	100	155	155	100.0%	5.9	63000	SB-NM-24	--	--	1.5E+03	3.3E+03	95% Chebyshev (Mean, Sd) UCL
	Mercury	20	20	300	0.3	151	146	96.7%	0.0094	20	SB-NM-23	0.01	0.11	1.1E+00	1.1E+00	Mean
	Nickel	600	600	10,000	20	138	138	100.0%	1.5	190	SB-NM-4	--	--	3.7E+01	3.7E+01	Mean
	Selenium	400	400	7,000	0.5	130	3	2.3%	0.74	6.9	SB-NM-14	0.12	78	5.5E+00	5.5E+00	Mean
	Silver	100	100	2,000	0.6	144	14	9.7%	0.37	20	SB-NM-25	0.06	7.8	9.9E-01	9.9E-01	Mean
	Vanadium	400	400	7,000	30	137	137	100.0%	5.3	300	SB-NM-23	--	--	7.5E+01	7.5E+01	Mean
	Zinc	1,000	1,000	10,000	100	137	137	100.0%	12	2500	SB-NM-25	--	--	6.9E+02	6.9E+02	Mean

Notes:

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

NS - No MassDEP standards exist for this analyte.

NA - Not applicable.

Boxed maxima exceed natural soil background.

VOCs - Volatile Organic Compounds.

EPH - Extractable Petroleum Hydrocarbons.

VPH - Volatile Petroleum Hydrocarbons.

SVOCs - Semi-Volatile Organic Compounds.

PCBs - Polychlorinated Biphenyls.

(1) Standard for C9-C10 aliphatics used.

EPC - Exposure Point Concentration.

UCL* - Upper concentration limit.

UCL - Upper confidence limit.

* - Background Concentration for natural soil.

EMPCs - Estimated Maximum Possible Concentrations.

TEQ - Toxicity Equivalent; calculated using 2005 WHO Toxicity Equivalent Factors.

Table 3. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	A1-0.5-3'	A13-0.5-3.6'	A14-0.5-4.7'	A18-0.5-3.6'	A5-A-2.5-3.5	A5-A-3.5-4.5	A5-C-2.5-3.5'	A5-C-3.5-4.5'	A5-H-4.5-5.5'	A5-I-2.5-3.5'	A5-I-3.5-4.5'	A5-J-3.5-4.5'	A5-K-3.5-4.5'	A5-L-3.5-4.5'	A6-0.5-1.75'	A7-0.5-1.6	A8-0.5-1.6'	A9-0.5-1.6'	B1-0.5-1.1'	B8-0.5-0.6'	B9-0.5-0.7	C1-0.5-0.6'	C5-0.5-0.6'
		Sample Depth (ft.):	0.5-3	0.5-3.6	0.5-4.7	0.5-3.6	2.5-3.5	3.5-4.5	2.5-3.5	3.5-4.5	4.5-5.5	2.5-3.5	3.5-4.5	3.5-4.5	3.5-4.5	3.5-4.5	0.5-1.75	0.5-1.6	0.5-1.6	0.5-1.6	0.5-1.1	0.5-0.6	0.5-0.7	0.5-0.6	0.5-0.6
		Sample Date:	10/12/2004	10/12/2004	10/12/2004	10/12/2004	12/3/2004	12/3/2004	12/3/2004	12/3/2004	12/28/2004	12/28/2004	12/28/2004	1/11/2005	1/11/2005	1/11/2005	10/12/2004	10/12/2004	10/12/2004	10/12/2004	10/12/2004	10/12/2004	10/12/2004	10/12/2004	10/12/2004
		UCL																							
VOCs																									
(mg/kg)	Acetone	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Butanone (MEK)	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	cis-1,2-Dichloroethylene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Trichloroethylene	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	m+p Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	o-Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PAHs																									
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																									
(mg/kg)	Total PCBs	100	**20.2**	**3.65**	**12.6**	**23.2**	**64.1**	**3.87**	**2.23**	**7.23**	**55**	1.16 U	**74.1**	**8.55**	**18.1**	**55.1**	1.96 U	1.96 U	**4.43**	1.87 U	1.81 U	**6.19**	**9.03**	**4.56**	**13.3**
Pesticides																									
(mg/kg)	alpha-BHC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Heptachlor epoxide	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																									
(mg/kg)	Arsenic	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
NA - Sample not analyzed for the listed analyte.
ND - Not detected; quantitation limit not available in historical data.
NS - No MassDEP standards exist for this analyte.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
PAHs - Polyaromatic Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
UCL - Upper concentration limit.
(1) - MCP UCL for C9-C10 aromatics used.

Table 3. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	C6-0.5-1	C7-0.5-1	C8-0.5-1.25'	C9-0.5-1.7'	D1-0.5-0.75	D10-0.5-2.2	D18-0.5-1.1	D5-0.5-0.8	D6-0.5-1.1	D7-0.5-1.15	D8-0.5-1.45	D9-0.5-1.9	DB 1-1-4'	DB 3-1-4'	DB 4-1-4'	DB 6-1-4'	DB 7-1-4'	DB 8-1-3'	DB 8-3-6'	DB 8-6-9'	DB12-1-4'	DB13-1-4'
		Sample Depth (ft.):	0.5-1	0.5-1	0.5-1.25	0.5-1.7	0.5-0.75	0.5-2.2	0.5-1.1	0.5-0.8	0.5-1.1	0.5-1.15	0.5-1.45	0.5-1.9	1-4	1-4	1-4	1-4	1-4	1-3	3-6	6-9	1-4	1-4
		Sample Date:	10/12/2004	10/12/2004	10/12/2004	10/12/2004	12/28/2004	12/28/2004	10/12/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	8/3/2004	8/3/2004	8/3/2004	8/3/2004	8/3/2004	8/3/2004	8/3/2004	8/3/2004	8/4/2004	8/3/2004
		UCL																						
VOCs																								
(mg/kg)	Acetone	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Butanone (MEK)	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	cis-1,2-Dichloroethylene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Trichloroethylene	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	m+p Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	o-Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PAHs																								
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																								
(mg/kg)	Total PCBs	100	**14.5**	**15.5**	**9.34**	**13.5**	**1.34**	**11.7**	**5.29**	**8.22**	**5.47**	**10.7**	**7.74**	**6.05**	**6.63**	**10.4**	**4.62**	**2.5**	**8.84**	**8.18**	**7.49**	1.2 U	**23.9**	**4.62**
Pesticides																								
(mg/kg)	alpha-BHC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Heptachlor epoxide	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																								
(mg/kg)	Arsenic	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
NA - Sample not analyzed for the listed analyte.
ND - Not detected; quantitation limit not available in historical data.
NS - No MassDEP standards exist for this analyte.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
PAHs - Polyaromatic Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
UCL - Upper concentration limit.
(1) - MCP UCL for C9-C10 aromatics used.

Table 3. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	DB14-1-3'	DB14-3-6'	DB14-6-9'	DB14-Comp	DB18-1-4'	DB19-1-4'	DB20-1-3'	DB20-3-6'	DB20-6-9'	DB20-Comp	DB24-1-4'	DB25-1-4'	DB26-B-1-3'	DB26-B-3-6'	DB26-C-1-3'	DB26-C-3-6'	DB26-C-6-9'	DB26-D-1-3'	DB26-D-3-6'	DB26-D-6-9'	DB26-F-3-6'	DB26-F-6-13'	DB26-G-3-6'
		Sample Depth (ft.):	1-3	3-6	6-9	1-9	1-4	1-4	1-3	3-6	6-9	1-9	1-4	1-4	1-3	3-6	1-3	3-6	6-9	1-3	3-6	6-9	3-6	6-13	3-6
		Sample Date:	8/3/2004	8/3/2004	8/3/2004	8/3/2004	8/4/2004	8/3/2004	8/3/2004	8/3/2004	8/3/2004	8/3/2004	8/4/2004	8/3/2004	9/9/2004	9/9/2004	9/9/2004	9/9/2004	9/9/2004	9/9/2004	9/9/2004	9/9/2004	9/22/2004	9/22/2004	9/22/2004
		UCL																							
VOCs																									
(mg/kg)	Acetone	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Butanone (MEK)	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	cis-1,2-Dichloroethylene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Trichloroethylene	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	m+p Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	o-Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PAHs																									
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																									
(mg/kg)	Total PCBs	100	**21.1**	**7.82**	**1.19**	**9.08**	**19.5**	**7.83**	**4.9**	**38.1**	**2.49**	**3.16**	**23.5**	**10.9**	19.2 U	21.6 U	18.7 U	24.2 U	22.2 U	**20.1**	23.1 U	20.8 U	**4.13**	**7.81**	**5.41**
Pesticides																									
(mg/kg)	alpha-BHC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Heptachlor epoxide	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																									
(mg/kg)	Arsenic	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
NA - Sample not analyzed for the listed analyte.
ND - Not detected; quantitation limit not available in historical data.
NS - No MassDEP standards exist for this analyte.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
PAHs - Polyaromatic Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
UCL - Upper concentration limit.
(1) - MCP UCL for C9-C10 aromatics used.

Table 3. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	DB26-G-6-12.5'	DB26-H-3-6'	DB26-H-6-11	DB30-1-4'	DB31-1-4'	DB32-B-1-3'	DB32-B-3-6	DB32-C-1-3'	DB32-C-3-6'	DB32-D-1-3	DB32-D-3-6'	DB36-1-4'	DB37-1-4'	DB38-1-3'	DB38-3-6'	DB38-6-9'	DB42-1-4'	DB43-1-4'	DB44-1-3'	DB44-3-6'	DB44-6-9'	DB48-1-4'	DB49-1-4'	DB50-1-3'	DB50-3-6'	DB50-6-9'
		Sample Depth (ft.):	6-12.5	3-6	6-11	1-4	1-4	1-3	3-6	1-3	3-6	1-3	3-6	1-4	1-4	1-3	3-6	6-9	1-4	1-4	1-3	3-6	6-9	1-4	1-4	1-3	3-6	6-9
		Sample Date:	9/22/2004	9/22/2004	9/22/2004	8/4/2004	8/3/2004	9/9/2004	9/9/2004	9/9/2004	9/9/2004	9/9/2004	9/9/2004	8/4/2004	8/3/2004	8/3/2004	8/3/2004	8/3/2004	8/4/2004	8/3/2004	8/3/2004	8/3/2004	8/3/2004	9/8/2004	8/3/2004	8/3/2004	8/3/2004	8/3/2004
		UCL																										
VOCs																												
(mg/kg)	Acetone	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Butanone (MEK)	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	cis-1,2-Dichloroethylene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Trichloroethylene	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	m+p Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	o-Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PAHs																												
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																												
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																												
(mg/kg)	Total PCBs	100	**2.41**	**8.16**	**11.2**	**9.45**	**7.01**	18.9 U	24.2 U	19.6 U	**24.8**	19.4 U	23.1 U	**5.86**	**32.1**	**2.46**	**26.5**	**5.25**	**7.91**	**36.7**	**1.46**	**38.2**	**29**	**24.9**	**7.23**	**22.8**	**1.91**	**4.15**
Pesticides																												
(mg/kg)	alpha-BHC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Heptachlor epoxide	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																												
(mg/kg)	Arsenic	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
NA - Sample not analyzed for the listed analyte.
ND - Not detected; quantitation limit not available in historical data.
NS - No MassDEP standards exist for this analyte.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
PAHs - Polyaromatic Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
UCL - Upper concentration limit.
(1) - MCP UCL for C9-C10 aromatics used.

Table 3. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	DB50-Comp	DB51-1-3'	DB51-3-6'	DB51-6-9'	DB52-1-4'	DB52-4-7'	DB52-7-10.5'	DB52-A-1-3'	DB52-A-3-6'	DB52-A-6-10'	DB52-B-1-3'	DB52-B-3-6'	DB52-B-6-10'	DB52-C-1-3'	DB52-C-3-6'	DB52-C-6-9.5	DB52-D-1-3'	DB52-D-3-6'	DB52-D-6-9.5	DB54-1-4'	DB55-1-4'	DB56-1-4'	DB57-1-4'	DB58-1-4'	DB59 C-1-3	DB59 C-3-6	DB59 C-6-10
		Sample Depth (ft.):	1-9	1-3	3-6	6-9	1-4	4-7	7-10.5	1-3	3-6	6-10	1-3	3-6	6-10	1-3	3-6	6-9.5	1-3	3-6	6-9.5	1-4	1-4	1-4	1-4	1-4	1-3	3-6	6-10
		Sample Date:	8/3/2004	8/3/2004	8/3/2004	8/3/2004	9/8/2004	9/8/2004	9/8/2004	9/14/2004	9/14/2004	9/14/2004	9/14/2004	9/14/2004	9/14/2004	9/14/2004	9/14/2004	9/14/2004	9/14/2004	9/14/2004	9/14/2004	9/8/2004	8/3/2004	8/3/2004	8/3/2004	9/8/2004	9/20/2004	9/20/2004	9/20/2004
		UCL																											
VOCs																													
(mg/kg)	Acetone	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Butanone (MEK)	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	cis-1,2-Dichloroethylene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Trichloroethylene	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	m+p Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	o-Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PAHs																													
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																													
(mg/kg)	Total PCBs	100	**5.9**	**3.5**	**3.75**	**8.91**	**7.56**	**23.4**	24.2 U	19.4 U	21.6 U	21.6 U	18.5 U	**32.5**	21.4 U	20.1 U	20.3 U	24.2 U	18.7 U	21.6 U	23.5 U	**34.2**	**6.96**	**2.94**	**7.86**	**15.4**	**22.9**	**8.63**	**22.2**
Pesticides																													
(mg/kg)	alpha-BHC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Heptachlor epoxide	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																													
(mg/kg)	Arsenic	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
NA - Sample not analyzed for the listed analyte.
ND - Not detected; quantitation limit not available in historical data.
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PAHs - Polyaromatic Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
UCL - Upper concentration limit.
(1) - MCP UCL for C9-C10 aromatics used.

Table 3. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	DB5-A-1-3'	DB5-C-1-3'	DB5-D-1-3'	DB5-D-3-6'	DB5-D-6-11.5	DB5-E-10-12'	DB5-E-1-3'	DB5-E-3-6'	DB5-E-6-10'	DB5-F-10-11.5	DB5-F-1-3'	DB5-F-3-6'	DB5-F-6-10'	DB5-G-1-3'	DB5-G-6-10.5	DB5-K-10-12'	DB5-K-1-3'	DB5-K-3-6'	DB5-K-6-10'	DB5-L-10-11.5	DB5-L-1-3'	DB5-L-3-6'	DB5-L-6-10'	DB5-M-10-12	DB5-M-1-3'	DB5-M-3-6'	DB5-M-6-10'
		Sample Depth (ft.):	1-3	1-3	1-3	3-6	6-11.5	10-12	1-3	3-6	6-10	10-11.5	1-3	3-6	6-10	1-3	6-10.5	10-12	1-3	3-6	6-10	10-11.5	1-3	3-6	6-10	10-12	1-3	3-6	6-10
		Sample Date:	9/14/2004	9/14/2004	9/14/2004	9/14/2004	9/14/04	9/29/04	9/29/04	9/29/04	9/29/04	9/29/04	9/29/04	9/29/04	9/29/04	9/30/04	9/30/04	9/30/04	9/30/04	9/30/04	9/30/04	9/30/04	9/30/04	9/30/04	9/30/04	9/30/04	9/29/2004	9/29/2004	9/29/04	9/29/04
		UCL																											
VOCs																													
(mg/kg)	Acetone	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Butanone (MEK)	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	cis-1,2-Dichloroethylene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Trichloroethylene	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	m+p Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	o-Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PAHs																													
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																													
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																													
(mg/kg)	Total PCBs	100	18.9 U	19.4 U	19.6 U	22.2 U	**12.9**	1.34 U	**5.61**	**5.92**	1.35 U	**1.82**	**11.3**	**49.1**	1.6 U	**4.1**	1.5 U	2.08 U	**13.6**	**5.42**	**27.6**	1.47 U	**7.74**	**8.44**	**7.24**	**1.52**	**8.47**	**70.6**	**38.6**
Pesticides																													
(mg/kg)	alpha-BHC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Heptachlor epoxide	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																													
(mg/kg)	Arsenic	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
NA - Sample not analyzed for the listed analyte.
ND - Not detected; quantitation limit not available in historical data.
NS - No MassDEP standards exist for this analyte.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
PAHs - Polyaromatic Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
UCL - Upper concentration limit.
(1) - MCP UCL for C9-C10 aromatics used.

Table 3. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	DB60-1-4'	DB8-Comp	DL18-1-3'	DL18-3-6'	DL19-1-3'	DL19-3-6'	DL20-1-3'	DL20-3-6'	DL22-1-3'	DL22-3-6'	DL35-1-4'	DL36-1-4'	DL36-4-8'	DL36-4-8'	E1-0.5-0.8	E10-0.5-1.9	E13-0.5-2.4	E14-0.5-1.25	E15-0.5-2.5	E5-0.5-0.85	E6-0.5-0.9	E7-0.5-1.2	E8-0.5-1.25	E9-0.5-1.5	F13-0.5-1.4	F14-0.5-1.5	F15-0.5-1
		Sample Depth (ft.):	1-4	1-9	1-3	3-6	1-3	3-6	1-3	3-6	1-3	3-6	1-4	1-4	4-8	4-8	0.5-0.8	0.5-1.9	0.5-2.4	0.5-1.25	0.5-2.5	0.5-0.85	0.5-0.9	0.5-1.2	0.5-1.25	0.5-1.5	0.5-1.4	0.5-1.5	0.5-1
		Sample Date:	9/8/04	8/3/04	8/11/04	8/11/04	8/11/04	8/11/04	8/11/04	8/11/2004	8/11/04	8/11/04	8/11/04	8/11/04	8/11/04	8/11/04	12/28/2004	12/28/2004	12/28/2004	10/14/2004	10/14/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	10/14/2004	10/14/2004
		UCL																											
VOCs																													
(mg/kg)	Acetone	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Butanone (MEK)	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	cis-1,2-Dichloroethylene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Trichloroethylene	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	m+p Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	o-Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PAHs																													
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																													
(mg/kg)	Total PCBs	100	**28.5**	**4.25**	**5.1**	**3.33**	**4**	**8.4**	**21**	**5.825**	**26**	1.28 U	**33.8**	**8.6**	**4.65**	**13.8**	**1.07**	**9.9**	**6.7**	**5.97**	**2.8**	**14.4**	**14.3**	**8.49**	**3.85**	**6.2**	1.11 U	**8.25**	**5.64**
Pesticides																													
(mg/kg)	alpha-BHC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Heptachlor epoxide	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																													
(mg/kg)	Arsenic	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
NA - Sample not analyzed for the listed analyte.
ND - Not detected; quantitation limit not available in historical data.
NS - No MassDEP standards exist for this analyte.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
PAHs - Polyaromatic Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
UCL - Upper concentration limit.
(1) - MCP UCL for C9-C10 aromatics used.

Table 3. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	G13-0.5-1.2	G14-0.5-1.5	G18-0.5-1.2	H1-0.5-0.65	H13-0.5-0.9	H14-0.5-1.25	H15-0.5-1.3	I1-0.5-0.7	I13-0.5-0.75	I14-0.5-1.25	J1-0.5-0.7	K1-0.5-0.7	K10-0.5-1.1	K12-0.5-1.2	K13-0.5-1.7	K14-0.5-1.15	K8-0.5-0.55	K9-0.5-0.9	L1-0.5-0.75	L10-0.5-1.1	L1-1-4'	L12-0.5-1	L13-0.5-1.5	L14-0.5-1.75	L6-1-4'	L6-8-9.5'
		Sample Depth (ft.):	0.5-1.2	0.5-1.5	0.5-1.2	0.5-0.65	0.5-0.9	0.5-1.25	0.5-1.3	0.5-0.7	0.5-0.75	0.5-1.25	0.5-0.7	0.5-0.7	0.5-1.1	0.5-1.2	0.5-1.7	0.5-1.15	0.5-0.65	0.5-0.9	0.5-0.75	0.5-1.1	1-4	0.5-1	0.5-1.5	0.5-1.75	1-4	8-9.5
		Sample Date:	12/28/2004	10/14/2004	10/14/2004	12/28/2004	12/28/2004	10/14/2004	10/14/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	12/28/2004	8/17/2004	12/28/2004	12/28/2004	12/28/2004	11/17/2004	11/17/2004
		UCL																										
VOCs																												
(mg/kg)	Acetone	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Butanone (MEK)	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	cis-1,2-Dichloroethylene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Trichloroethylene	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	m+p Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	o-Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PAHs																												
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																												
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																												
(mg/kg)	Total PCBs	100	1.08 U	**5.83**	1.11 U	**7.58**	**3.83**	**6.38**	**5.87**	1.13 U	1.08 U	**4.2**	**4.39**	**11.9**	**3.53**	**6.01**	1.03 U	**13.8**	1.09 U	1.07 U	**1.09**	**7.17**	**3.64**	1.12 U	**5.02**	**4.21**	**35.8**	**10.5**
Pesticides																												
(mg/kg)	alpha-BHC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Heptachlor epoxide	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																												
(mg/kg)	Arsenic	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
NA - Sample not analyzed for the listed analyte.
ND - Not detected; quantitation limit not available in historical data.
NS - No MassDEP standards exist for this analyte.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
PAHs - Polyaromatic Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
UCL - Upper concentration limit.
(1) - MCP UCL for C9-C10 aromatics used.

Table 3. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	L7-1-4'	L7-4-8'	L7-8-9'	L8-1-3'	L8-3-6'	L8-6-9'	L9-0.5-0.75	L9-1-4'	L9-4-7'	L9-7-10'	M12-0.5-0.8	M14-0.5-1.25	N1-0.5-1.2	N12-0.5-0.9	N13-0.5-1.5	N14-0.5-1	N15-0.5-1	N2-0.5-1.4	N3-0.5-1.3	N4-0.5-0.75	O13-0.5-1.1	O14-0.5-1	O15-0.5-1.75	P11-0.5-0.9	P13-0.5-1.0
		Sample Depth (ft.):	1-4	4-8	8-9	1-3	3-6	6-9	0.5-0.75	1-4	4-7	7-10	0.5-0.8	0.5-1.25	0.5-1.2	0.5-0.9	0.5-1.5	0.5-1	0.5-1	0.5-1.4	0.5-1.3	0.5-0.75	0.5-1.1	0.5-1	0.5-1.75	0.5-0.9	0.5-1.0
		Sample Date:	11/17/2004	11/17/2004	11/17/2004	8/17/2004	8/17/2004	8/17/2004	12/28/2004	8/17/2004	8/17/2004	8/17/2004	12/28/2004	12/28/04	12/28/04	12/28/04	12/28/04	12/28/2004	12/28/2004	12/28/04	12/28/04	12/28/2004	12/28/04	12/28/04	12/28/04	12/28/04	12/28/04
		UCL																									
VOCs																											
(mg/kg)	Acetone	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Butanone (MEK)	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	cis-1,2-Dichloroethylene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Ethylbenzene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	p-Isopropyltoluene (p-Cymene)	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	n-Propylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Tetrachloroethylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Toluene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Trichloroethylene	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1,2,4-Trimethylbenzene	5,000(1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	m+p Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	o-Xylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PAHs																											
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																											
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Anthracene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluoranthene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Fluorene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Naphthalene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Phenanthrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pyrene	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Carbazole	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																											
(mg/kg)	Total PCBs	100	**7.01**	2.31 U	**2.36**	**3.81**	**13.5**	**0.961**	1.12 U	**1.67**	**1.24**	**3.32**	1.11 U	**8.35**	**5.02**	1.12 U	**3.26**	**11.2**	1.17 U	**4.94**	**4.91**	**3.25**	**11.1**	2.29 U	**14.8**	**11.8**	**17.9**
Pesticides																											
(mg/kg)	alpha-BHC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Heptachlor epoxide	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals, total																											
(mg/kg)	Arsenic	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	6,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Mercury	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.
NA - Sample not analyzed for the listed analyte.
ND - Not detected; quantitation limit not available in historical data.
NS - No MassDEP standards exist for this analyte.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
PAHs - Polyaromatic Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
UCL - Upper concentration limit.
(1) - MCP UCL for C9-C10 aromatics used.

Table 3. Summary of Analytical Results for Soil Samples -- 0-15' bgs
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	P14-0.5-1.35	P15-0.5-0.75	B1-S2	B5-S2	B5-S-3	TB/OW-2	TB/OW-2	TB/OW-2	TB/OW-18	TB/OW-18	TB/OW-18
		Sample Depth (ft.):	0.5-1.35	0.5-0.75	2-4	2-4	4-6	5-9	6-7.5	9.25-9.75	3.5-7	8-9	10.5-11.5
		Sample Date:	12/28/04	12/28/04	4/12/00	4/12/00	4/12/00	9/30/02	9/30/02	9/30/02	9/30/02	9/30/2002	9/30/02
		UCL											
VOCs													
(mg/kg)	Acetone	10,000	NA	NA	NA	NA	NA	**0.018**	**0.13**	ND	**0.014**	**0.13**	**0.25**
	Benzene	10,000	NA	NA	NA	NA	NA	**0.0011**	**0.0018**	ND	**0.0012**	**0.0036**	**0.0023**
	2-Butanone (MEK)	10,000	NA	NA	NA	NA	NA	**0.011**	**0.028**	ND	**0.012**	**0.044**	**0.088**
	cis-1,2-Dichloroethylene	5,000	NA	NA	NA	NA	NA	**0.0011**	**0.0019**	ND	**0.0012**	**0.0045**	**0.0021**
	Ethylbenzene	10,000	NA	NA	NA	NA	NA	**0.0011**	**0.0014**	ND	**0.0012**	**0.0037**	**0.0024**
	p-Isopropyltoluene (p-Cymene)	5,000[1]	NA	NA	NA	NA	NA	**0.0011**	**0.0014**	ND	**0.0012**	**0.0016**	ND
	Naphthalene	10,000	NA	NA	NA	NA	NA	**0.0054**	**0.0072**	ND	**0.0058**	**0.024**	ND
	n-Propylbenzene	5,000[1]	NA	NA	NA	NA	NA	**0.0011**	**0.0014**	ND	**0.0012**	**0.0016**	ND
	Tetrachloroethylene	10,000	NA	NA	NA	NA	NA	**0.0012**	**0.0014**	ND	**0.0012**	**0.0016**	ND
	Toluene	10,000	NA	NA	NA	NA	NA	**0.0037**	**0.0052**	ND	**0.0018**	**0.0064**	**0.0081**
	Trichloroethylene	600	NA	NA	NA	NA	NA	**0.0011**	**0.0014**	ND	**0.0012**	**0.0028**	**0.0021**
	1,2,4-Trimethylbenzene	5,000[1]	NA	NA	NA	NA	NA	**0.0054**	**0.0072**	ND	**0.0058**	**0.01**	ND
	m+p Xylene	10,000	NA	NA	NA	NA	NA	**0.0022**	**0.0041**	ND	**0.0023**	**0.011**	**0.0061**
	o-Xylene	10,000	NA	NA	NA	NA	NA	**0.0022**	**0.0029**	ND	**0.0023**	**0.0082**	**0.0041**
PAHs													
(mg/kg)	Acenaphthene	10,000	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND
	Acenaphthylene	10,000	NA	NA	NA	NA	NA	**0.088**	**0.33**	ND	ND	0.28 U	ND
	Anthracene	10,000	NA	NA	NA	NA	NA	**0.34**	**1.3**	ND	ND	**1.3**	**0.22**
	Benzo(a)anthracene	3,000	NA	NA	NA	NA	NA	**0.8**	**2.6**	ND	ND	**3.9**	**0.6**
	Benzo(a)pyrene	300	NA	NA	NA	NA	NA	**0.72**	**2.3**	ND	ND	**3.9**	**0.62**
	Benzo(b)fluoranthene	3,000	NA	NA	NA	NA	NA	**0.65**	**2**	ND	ND	**3.3**	**0.37**
	Benzo(g,h,i)perylene	10,000	NA	NA	NA	NA	NA	**0.47**	**1.5**	ND	ND	**2.6**	**0.38**
	Benzo(k)fluoranthene	10,000	NA	NA	NA	NA	NA	**0.56**	**1.8**	ND	ND	**3.6**	**0.39**
	Chrysene	10,000	NA	NA	NA	NA	NA	**0.8**	**2.6**	ND	ND	**4.1**	**0.72**
	Dibenz(a,h)anthracene	300	NA	NA	NA	NA	NA	**0.12**	**0.4**	ND	ND	**0.5**	ND
	Fluoranthene	10,000	NA	NA	NA	NA	NA	**1.7**	**5.4**	ND	ND	**6.4**	**0.58**
	Fluorene	10,000	NA	NA	NA	NA	NA	**0.14**	**0.66**	ND	ND	**0.78**	ND
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	NA	NA	NA	**0.54**	**1.7**	ND	ND	**3.1**	**0.35**
	2-Methylnaphthalene	5,000	NA	NA	NA	NA	NA	ND	0.34 U	ND	ND	0.28 U	ND
	Naphthalene	10,000	NA	NA	NA	NA	NA	**0.041**	**0.22**	ND	ND	**0.61**	ND
	Phenanthrene	10,000	NA	NA	NA	NA	NA	**1.3**	**4.5**	ND	ND	**5.1**	**0.75**
	Pyrene	10,000	NA	NA	NA	NA	NA	**1.6**	**5**	ND	ND	**5.8**	**0.94**
SVOCs													
(mg/kg)	Acenaphthene	10,000	NA	NA	0.32 U	1.44 U	NA	ND	ND	ND	ND	ND	ND
	Acenaphthylene	10,000	NA	NA	**0.46**	0.74 U	NA	ND	ND	ND	ND	ND	ND
	Anthracene	10,000	NA	NA	**1.2**	**2.1**	NA	ND	**1.2**	ND	ND	3.5 U	ND
	Benzo(a)anthracene	3,000	NA	NA	**3.0**	**5.4**	NA	**0.88**	**2.3**	ND	ND	**4.6**	ND
	Benzo(a)pyrene	300	NA	NA	**2.8**	10.8 U	NA	**0.8**	**2.2**	ND	ND	**4.6**	ND
	Benzo(b)fluoranthene	3,000	NA	NA	**3.2**	11.8 U	NA	**0.65**	**1.6**	ND	ND	**3.6**	ND
	Benzo(g,h,i)perylene	10,000	NA	NA	**1.7**	3.0 U	NA	**0.57**	**1.4**	ND	ND	3.5 U	ND
	Benzo(k)fluoranthene	10,000	NA	NA	**0.75**	3.4 U	NA	**0.67**	**1.8**	ND	ND	**4**	ND
	Chrysene	10,000	NA	NA	**2.4**	10.4 U	NA	**0.87**	**2.4**	ND	ND	**4.9**	ND
	Dibenz(a,h)anthracene	300	NA	NA	**0.46**	1.18 U	NA	ND	ND	ND	ND	ND	ND
	Fluoranthene	10,000	NA	NA	**6.4**	17.4 U	NA	**0.96**	**4.6**	ND	ND	**7.1**	ND
	Fluorene	10,000	NA	NA	**0.39**	1.52 U	NA	ND	ND	ND	ND	ND	ND
	Indeno(1,2,3-cd)pyrene	3,000	NA	NA	**1.5**	4.0 U	NA	ND	**1.4**	ND	ND	3.5 U	ND
	2-Methylnaphthalene	5,000	NA	NA	0.32 U	0.31 U	NA	ND	ND	ND	ND	ND	ND
	Naphthalene	10,000	NA	NA	0.32 U	**0.46**	NA	ND	0.74 U	ND	ND	3.5 U	ND
	Phenanthrene	10,000	NA	NA	**4.2**	17.6 U	NA	**1.4**	**4.1**	ND	ND	**5.7**	ND
	Pyrene	10,000	NA	NA	**4.4**	17.2 U	NA	**1.7**	**4.3**	ND	ND	**6.8**	ND
	Carbazole	NS	NA	NA	**0.47**	2.0 U	NA	ND	ND	ND	ND	ND	ND
PCBs													
(mg/kg)	Total PCBs	100	**8.82**	1.16 U	NA	NA	**18**	**0.775**	**3.69**	**0.02715**	ND	**6.12**	**0.334**
Pesticides													
(mg/kg)	alpha-BHC	NS	NA	NA	**0.33**	**0.042**	NA	NA	NA	NA	NA	NA	NA
	Heptachlor epoxide	10	NA	NA	**0.042**	**0.185**	NA	NA	NA	NA	NA	NA	NA
Metals, total													
(mg/kg)	Arsenic	500	NA	NA	7.6 U	40 U	NA	**2.2**	**7.7**	ND	**1.1**	**15**	**2.3**
	Barium	10,000	NA	NA	**710**	**18,000**	NA	**130**	**210**	**20**	**19**	**640**	**66**
	Cadmium	1,000	NA	NA	**1.5**	**5.2**	NA	**0.57**	**1.2**	ND	ND	**4.4**	ND
	Chromium	2,000	NA	NA	**61**	**760**	NA	**32**	**25**	**6.7**	**16**	**150**	**14**
	Lead	6,000	NA	NA	**480**	**1,500**	NA	**120**	**440**	**2.2**	**12**	**1,000**	**51**
	Mercury	300	NA	NA	**0.69**	**3.2**	NA	**0.32**	**0.74**	**0.084**	ND	**1.7**	**0.17**
	Silver	2,000	NA	NA	2.1 U	11 U	NA	ND	0.58 U	ND	ND	**1.1**	ND

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
J - Estimated value.
NA - Sample not analyzed for the listed analyte.
ND - Not detected; quantitation limit not available in historical data.
NS - No MassDEP standards exist for this analyte.
U - Compound was not detected at specified quantitation limit.
Values in Bold indicate the compound was detected.
VOCs - Volatile Organic Compounds.
PAHs - Polyaromatic Hydrocarbons.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
UCL - Upper concentration limit.
(1) - MCP UCL for C9-C10 aromatics used.

Table 4. Summary Statistics for Barium
Keith Middle School Portion
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-2	S-1/GW-3	UCL*	Background	# of Samples	# of Detects	Freq. of Detects	Min. of Detects (mg/kg)	Max. of Detects (mg/kg)	Location of Max. Detected	Min. of Non-Detects (mg/kg)	Max. of Non-Detects (mg/kg)	Mean Concentration (mg/kg)	EPC (mg/kg)	EPC Rationale
Metals, total																
	Barium	1,000	1,000	10,000	50	8	8	100.0%	19	18000	B5-S2	--	--	2.5E+03	2.5E+03	Mean

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
Boxed maxima exceed natural soil background.
EPC - Exposure Point Concentration.
UCL* - Upper concentration limit.
UCL - Upper confidence limit.
* - Background Concentration for natural soil.