RELEASE ABATEMENT MEASURE PLAN

SOIL REMOVAL AT SAMPLE LOCATION HF-31
NEW BEDFORD HIGH SCHOOL

Parker Street Waste Site
New Bedford, Massachusetts

Release Tracking Number 4-15685

Prepared for:

City of New Bedford
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1.0 INTRODUCTION

TRC Environmental Corporation (TRC) prepared this Release Abatement Measures (RAM) Plan for remediation activities proposed to be performed on behalf of the City of New Bedford (City) at the New Bedford High School (NBHS) campus at soil sample location HF-31. For the purposes of this RAM Plan, the Site is defined as the NBHS campus portion of the Parker Street Waste Site (PSWS) at sample location HF-31, located on the west side of the NBHS campus. This RAM was prepared per 310 CMR 40.0440 of the Massachusetts Contingency Plan (MCP).

A portion of the soil volume targeted for removal under this RAM is regulated by the United States Environmental Protection Agency (EPA) under the regulations of the Toxic Substances Control Act (TSCA), specifically applicable sections of 40 CFR Part 761. With support from TRC, the City clarified EPA's requirements in advance of the preparation of this RAM Plan. Correspondence related to the advanced planning with EPA is cited herein where appropriate and provided in an appendix.

The proposed RAM activities include the following:

- Excavation of soil regulated as polychlorinated biphenyl (PCB) Remediation Waste and direct loading into a lined roll-off consistent with regulatory requirements;
- PCB remediation confirmatory sampling;
- Excavation of remaining non-PCB Remediation Waste consistent with MCP requirements and risk reduction objectives;
- Off-Site disposal of all excavated soils;
- Off-Site disposal of remediation-derived wastes (i.e. decontamination solvents, rags, etc.); and
- Backfilling the excavated soil with appropriately documented contaminant-free fill material screened in advance for the presence of regulated contaminants.

Currently, soil exposure point concentrations (EPCs) under baseline conditions for total PCBs exceed MCP Method1/Method 2 S-1 soil cleanup standards for current and/or future site conditions at sample location HF-31. Current and potential frequency of use by children and adults is "high" due to the active use of unpaved areas of the NBHS campus for the majority of the year. As a result, a Condition of No Significant Risk does not exist for impacted soils at location HF-31 under current and future use scenarios.

During the delineation of PCB impacted soils at sample location HF-31, PCBs were detected at sample location HF-31D at a concentration of 71.6 milligrams per kilogram (mg/kg) in the 1-3 foot sampling interval. As PCBs were detected at a concentration greater than 50 mg/kg in soils, and meet the definition of PCB Remediation Waste (as defined in 40 CFR §761.3), the remediation activity at sample location HF-31D will be performed in compliance with 40 CFR 761, and the MCP.

A PCB Remediation Notification letter was issued by the City to the United States Environmental Protection Agency (EPA) on July 14, 2010. Following a teleconference with the EPA Region 1 PCB Coordinator, an amendment to the PCB Remediation Notification letter was issued to EPA on October 21, 2010, which served to clarify issues discussed during the teleconference. Copies of this correspondence are included in Appendix A.

The area at sample location HF-31 was identified for targeted soil removal to achieve a Condition of No Significant Risk under the MCP for the top three feet of soil. Based on characterization performed in advance to delineate the soil area targeted for remediation, TRC used a Method 1/ Method 2 risk characterization approach to demonstrate that a Condition of No Significant Risk will exist for soil at the Site for the top 3 feet of soil following removal. Ultimately, when the RAM actions have been completed and a Condition of No Significant Risk has been achieved for the top 3 feet of soils, an Activity and Use Limitation (AUL) will need to be placed on the property to control certain site uses and activities to achieve a Response Action Outcome (RAO). Site use limitations will be required to prevent potential exposure to impacted soils greater than three feet below ground surface and below paved surfaces, which will be accomplished by placing an AUL on the property.

The proposed work to be performed under this RAM will serve to remove the EPA-regulated PCB Remediation Waste soil and to reduce current and future risks at the sample location HF-31 only. No other soil removal or remediation activities at the NBHS campus are addressed by this RAM Plan.

1.1 Background Information

At the Site, TRC conducted supplemental environmental sampling to refine the delineation of potentially impacted areas of soil to support remedial planning. TRC conducted soil sampling along concentric rings (i.e., step-out sampling) around sampling locations identified for potential excavation. During this supplemental data collection and concurrent remedial planning phase, the remedial goals were EPCs less than or equal to Method 1/Method 2 S-1 soil cleanup standards focusing on a vertical depth of up to three feet below ground surface (i.e., targeting currently accessible soils). A summary of supplemental environmental sampling activities completed at the Site is presented in Section 3.3.1 of this RAM Plan.

The soil removal activities described in this RAM Plan are intended to address impacted soils at sample location HF-31 only. Any other remedial activities will be addressed in future regulatory submittals.

1.2 Work Summary

Work to be performed under this RAM includes:

- Excavation of soil regulated as polychlorinated biphenyl (PCB) Remediation Waste and direct loading into a lined roll-off consistent with United States Environmental Protection Agency (EPA) requirements;
- PCB remediation confirmatory sampling;

- Excavation of remaining non-PCB Remediation Waste consistent with MCP requirements and risk reduction objectives;
- Off-Site disposal of all excavated soils;
- Off-Site disposal of remediation-derived wastes (i.e. decontamination solvents, rags, etc.); and
- Backfilling of the excavation with appropriately documented contaminant-free fill material screened in advance for the presence of regulated contaminants.

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

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

Supporting appendices include Appendix A (Advance Correspondence with EPA), Appendix B (Remediation Figure), Appendix C (Soil Management Plan), Appendix D (RAM Plan Fee Documentation), Appendix E (Municipal Notification Letters), Appendix F (Excerpts from 40 CFR Part 761).

1.3 Regulatory Status

1.3.1 Release Reporting

The Site is a portion of a larger disposal site, the Parker Street Waste Site (PSWS), under MCP (310 CMR 40.0000) that is tracked by the Massachusetts Department of Environmental Protection (MassDEP) under Release Tracking Number (RTN) 4-15685. MassDEP has assigned Release Tracking Numbers (RTNs) applicable to the site including 4-15685, 4-21847, 4-21872, and 4-22409. RTNs 4-21847 and 4-21872 are associated with Immediate Response Actions (IRAs) which are expected to be incorporated into the remedy for RTN 4-15685 (the original release associated with the PSWS). IRA activities associated with RTN 4-22409 are currently ongoing and these RAM activities at this time are not focused on a remedy for this RTN. The current status of IRA activities for RTN 4-22409 are discussed in the *Immediate Response Action Status Report, New Bedford High School Substantial Release Migration/Critical Exposure*

Pathway dated May 2010. Response actions at the PSWS are conducted under a Special Project designation (310 CMR 40.0060) due to logistical complexities.

Note that this RAM applies only to the NBHS portion of the PSWS at sample location HF-31. Remedy Implementation Plans (RIPs), or alternatively Release Abatement Measures (RAMs), will be prepared for the other areas of concern at NBHS, as appropriate.

2.0 PARTY ASSUMING RESPONSIBILITY FOR THE RAM

The party undertaking this RAM is:

City of New Bedford
133 William Street
New Bedford, Massachusetts 02740
Contact: Mr. Scott Alfonse
(508) 979-1487

3.0 RELEASE DESCRIPTION, SITE CONDITIONS & SURROUNDING RECEPTORS

3.1 Site Description

The subject of this RAM Plan occupies approximately 0.02 acres (850 square feet) and is located on the NBHS campus portion of PSWS in the vicinity of historical sample location HF-31 (the Site), located on the west side of the NBHS campus. PSWS encompasses an area greater than 100 acres based on currently available information, in the vicinity of NBHS. A Site location map is provided as Figure 1.

3.2 Surrounding Receptors

The Site lies within 500 feet of residential properties and also includes the following properties and land uses:

- The remainder of the NBHS Campus, including the NBHS building located to the east of the Site;
- The KMS campus is located across Hathaway Boulevard west of the Site; and
- Residential properties are located across Hathaway Boulevard southwest of the Site.

Groundwater categories at the Site include actual or potential GW-2, depending upon proximity to occupied structures (groundwater is encountered at approximately 4-7 feet below ground surface based on recent groundwater monitoring well installations at NBHS by TRC), and GW-3, which applies to all groundwater throughout the Commonwealth.

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

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

3.3 Release Description

As described previously, MassDEP tracks the release at the Site under RTN 4-15685 that is associated with the PSWS. The impacted fill that has been noted on the Site is associated with historical landfill activities at the Site. Historical documentation indicates that the Site was an undeveloped wetland prior to the disposal activities.

3.3.1 Overview of Investigation History

In July 2001, Vanasse Hangen Brustlin, Incorporated (VHB) collected 22 soil samples from 15 sampling locations at the NBHS campus (VHB, 2001). The samples were analyzed for PCBs,

semi-volatile organic compounds (SVOCs), RCRA 8 metals, and extractable petroleum hydrocarbons (EPH). On or about May 6, 2010, these data were brought to TRC's attention by the City. The samples were identified as SS-1 to SS-15 by VHB. Due to TRC having utilized the same identification designations prior to knowledge of the samples, a "V" has been added to the sample identifications (SS-1 became VSS-1) to avoid confusion going forward.

Other prior subsurface environmental investigations at PSWS were conducted by BETA Group, Incorporated (BETA) between September 2004 and February 2006. During that time, BETA advanced 343 soil borings plus an additional 12 surface soil samples (0-6 inches) at the Site. Of these 343 sampling locations, BETA observed fill at 276 locations (BETA, 2006b).

The results of laboratory analyses are discussed in Section 4.0 relative to MCP regulatory standards. BETA identified the following contaminants of concern (COCs) (BETA, 2006b):

- PCBs
- arsenic
- barium
- cadmium
- chromium
- lead
- mercury
- PAHs (specifically: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, indeno(1,2,3-cd) pyrene, phenanthrene, and pyrene).

TRC's environmental investigations consisted of direct push soil borings using track-, truck-, or dolly-mounted drill rigs to sample soil, observe subsurface soil conditions and install groundwater monitoring wells. Surface soil samples were collected using hand tools. The investigative approach was intended to evaluate the presence or absence of fill, the horizontal and vertical extent of potential impacts, and the potential presence of COCs in soil and fill material based on documentation available to TRC and past sampling in the area.

Supplemental environmental sampling was conducted by TRC from July 2008 through August 2009 supplement previous work at NBHS by others and to refine the delineation of impacted areas and support remedial planning. The delineation sampling investigations were performed to determine pre-defined excavation boundaries for the lateral and vertical extent necessary to achieve the remedial goal (i.e., EPCs less than or equal to Method 1/Method 2 S-1 soil cleanup standards, later verified via Method 3). Based on the risk characterization results, the supplemental sampling investigations were focused on a vertical depth of up to three feet below ground surface, targeting currently accessible soils. For the areas targeted as being considered for excavation, the excavation limits were determined by recalculating the exposure point concentrations for each targeted area after the samples within the excavation boundaries were eliminated from the data set, confirming that a condition of No Significant Risk would be

achieved for the targeted areas following excavation. Please refer to the following documents for detailed discussions of TRC's prior soil investigation activities at the Site:

- *Data Summary Report, New Bedford High School, New Bedford, Massachusetts.* December 2008.
- *Interim Phase II Comprehensive Site Assessment, New Bedford High School and Dr. Paul F. Walsh Memorial Field, New Bedford, Massachusetts.* July 2009.
- *Immediate Response Action Completion Report and Imminent Hazard Evaluation, HB-23 Area Impacted Soil Removal, New Bedford High School, New Bedford, Massachusetts.* July 2009.
- *Immediate Response Action Completion Report and Imminent Hazard Evaluation, HH-13 Area Arsenic and Chromium Impacted Surface Soil, New Bedford High School, New Bedford, Massachusetts.* May 2009.
- *Data Summary Report, New Bedford High School, New Bedford, Massachusetts.* March 2010.

Figure 2 illustrates the locations investigated by TRC at NBHS. The sampling locations were surveyed by Land Planning, Incorporated of Hanson, Massachusetts (Land Planning) following TRC's sampling activities.

TRC conducted field screening of soil samples consisting of visual and olfactory observations, jar headspace readings using an appropriately calibrated photoionization detector (PID), and professional judgment, consistent with TRC Standard Operating Procedures (SOPs) and general industry practice. TRC employed the MassDEP jar headspace technique (MassDEP, 1996) to screen for the presence of volatile organic compounds (VOCs) in soil. TRC also evaluated and logged the geologic character of the soil samples consistent with the Burmeister (1958) method.

Soil samples for PCB Aroclor and homolog analyses were submitted to Northeast Analytical Laboratories (NEA) of Schenectady, New York. Soil samples for MCP metals and mercury, PAHs, and Toxicity Characteristic Leaching Procedure (TCLP) metals analyses were submitted to Con-Test Analytical Laboratory (Con-Test) of East Longmeadow, Massachusetts. All samples were submitted under chain-of-custody.

A summary of all analytical data is also provided herein.

3.3.1.1 Dioxin Investigative Sampling

On April 15, 2010, TRC conducted soil investigative sampling for polychlorinated dibenzo-p-dioxins (dioxins), polychlorinated dibenzofurans (furans) and dioxin-like PCBs (collectively referred to as dioxin-like compounds or congeners). A total of sixteen samples were collected from five sampling locations, including sampling location HF-31D, and analyzed for dioxins and furans by SW-846 Method 8290 and dioxin-like PCB congeners by SW-846 Method 1668A by Analytical Perspectives of Wilmington, North Carolina. All samples were also analyzed for PCBs as Aroclors by NEA, and PAHs, MCP metals and mercury by Con-Test.

The sampling locations selected for supplemental dioxin-like compound characterization were five previous sample locations TRC identified as being representative and conservative for evaluating exposure risk associated from dioxin-like compounds based on a review of all soil data collected. This evaluation of sample locations was based on existing chemical signature and geographic coverage within the population of previous sample locations. In developing the investigation program for dioxin-like compound soil sampling at NBHS, TRC reviewed relevant soil data from the area focusing principally on metals, PAHs, SVOCs, and PCBs (homologs or Aroclors) to develop a process for sample selection, such as the combination of burning artifacts (ash, metals enrichment, and PAHs) and precursor chemicals (e.g., PCBs). Soil samples with concentrations greater than regulatory limits for PCBs, PAHs, and/or metals were evaluated to identify a population of samples for potential dioxin, furan, and dioxin-like PCB congener analyses. At each sample location, a sample was taken of the top one foot soil interval, the one to three foot soil interval, and the historic fill.

The results of the dioxin-like compound investigative sampling at sample location HF-31 are discussed separately in Section 3.3.3.

3.3.2 Current Subsurface Conditions

The Site is underlain by topsoil and up to approximately 6 feet of anthropogenic fill material that includes sandy material with ash. In places, the ash fill includes broken glass, brick fragments, rubber, slag, coal, cinders, plastic and/or metallic fragments. Traces of fill were indentified in soils 6 inches below ground surface, with a defined layer of fill identified at 24 inches to 36 inches below ground surface. Although none of the borings at the Site were completed to native soils, fill thickness across the investigation area ranges from 0.1 feet to 11.0 feet. Anthropogenic fill materials within the investigation area are underlain by approximately 0.25 to 6.0 feet of native dark brown organic peat material, mixed with silt and clay in places from the wetland that predates the development of the area. Native soils below the organic peat are characterized by gray fine silty sands with trace gravel and/or medium sand in places.

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

Based on review of the 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). Soil boring activities were terminated in native material unless refusal was encountered

first. Direct push methods were employed to sample Site soils to characterize the presence of fill materials and the horizontal and vertical extents of soil contamination. Bedrock was not assessed during this investigation. However, the boring methods employed were sufficient to assess the vertical extent of Site impacts.

The *Interim Phase II Comprehensive Site Assessment, New Bedford, Massachusetts,* dated July 2009, presented data and site activities at the PSWS up through December 2008 and described the nature and extent of impacted soil relative to the 0 to 1 foot below ground surface horizon, 1 to 3 foot below ground surface horizon, and greater than 3 foot below ground surface horizon. The 0 to 1 foot horizon is considered to be representative of COC concentrations located at or near the ground surface that are directly accessible, have a high potential for contact by people, and are representative of current exposures. The 1 to 3 foot horizon is considered to be representative of COC concentrations that are below the ground surface, not immediately accessible and have a lower potential for contact by people (potential for contact by maintenance or construction personnel when performing activities that require digging below the ground surface exists). In some exposure point areas, the intervals of some samples collected by BETA encompass more than one soil horizon. For discussion purposes, where the sample interval includes surficial soil (for example sampling interval 0 to 2 feet), the sampling interval was considered to be part of the 0 to 1 foot soil horizon. Where a sample interval does not include surficial soil (for example 0.5 to 1.5 feet), the sampling interval was considered to be part of the 1 to 3 foot soil horizon. The relevant data, and their respective interval assignments, are included in Table 1.

Prior sample results from BETA at sample location HF-31 detected total PCBs at a concentration of 2.55 mg/kg in the 1 to 3 foot soil horizon, which exceeds the MCP Method 1 soil cleanup standards. In the vicinity of sample location HF-31, samples were collected at six sample locations in a grid pattern having a 10-foot lateral separation (sample locations identified as HF-31A, HF-31B, HF-31C, HF-31D, HF-31G, and HF-31H) at 0-1 foot and 1-3 foot intervals and analyzed for PCBs, cadmium, and lead for delineation purposes. Samples were collected at locations HF-31E and HF-31F, but not analyzed, as sample locations HF-31A and HF-31B exhibited acceptable results. Total PCBs were detected at sample location HF-31D at 71.6 mg/kg in the 1 -3 foot sampling interval. Using MCP risk assessment procedures, the excavation area was determined to be bound by samples HF-31A, HF-31B, HF-31G, and HF-31H. The sample results are presented in Table 1. Sample locations are identified in Figure 2.

The removal of the soil at the Site will meet MCP risk reduction goals and will also result in the removal of soils shown to exhibit a total PCB concentration greater than or equal to 50 mg/kg (i.e., PCB Remediation Waste).

3.3.3 Dioxin Investigative Sampling Results

On April 15, 2010, TRC conducted soil investigative sampling for polychlorinated dibenzo-p-dioxins (dioxins), polychlorinated dibenzofurans (furans) and dioxin-like PCB congeners (collectively referred to as dioxin-like compounds). A total of sixteen samples were collected from five sample locations and analyzed for dioxins and furans by SW-846 Method 8290, and

dioxin-like PCB congeners by SW-846 Method 1668A. All samples were also analyzed for PCBs as Aroclors, PAHs, and MCP metals (including mercury).

The sampling locations, which included sample location HF-31D at the Site, were five previous sample locations TRC identified as being representative and conservative for evaluating exposure risk associated from dioxin-like compounds based on a review of all soil data collected (i.e., estimated worst case). This evaluation of sample locations was based on existing chemical signature and geographic coverage within the population of previous sample locations. At each sample location a sample was taken of the top one foot soil interval, the one to three foot soil interval, and the historic fill.

For the soil sample taken at the Site (sample location HF-31D) from the April 2010 dioxin investigative sampling, the laboratory results were generally consistent with prior sampling results, with the exception of the total PCB concentration detected at 0.73 mg/kg in the 1-3 foot soil interval. Total PCBs were previously detected on April 2, 2009 at 71.6 mg/kg in the 1-3 foot soil interval.

The dioxin-like compound Toxicity Equivalents (TEQs) from the additional sampling are associated with No Significant Risk under the site-specific Method 3 risk characterization approach.

A summary of the soil analytical results at HF-31D is included in Table 2.

4.0 OBJECTIVE, PLAN & IMPLEMENTATION SCHEDULE

4.1 Objective

Work to be performed under this RAM includes:

- Excavation of soil regulated as polychlorinated biphenyl (PCB) Remediation Waste and direct loading into a lined roll-off consistent with United States Environmental Protection Agency (EPA) requirements;
- PCB remediation confirmatory sampling;
- Excavation of remaining non-PCB Remediation Waste consistent with MCP requirements and risk reduction objectives;
- Off-Site disposal of all excavated soils;
- Off-Site disposal of remediation-derived wastes (i.e. decontamination solvents, rags, etc.); and
- Backfilling of the excavation with appropriately documented contaminant-free fill material screened in advance for the presence of regulated contaminants.

The objective of these RAM activities is to remove all PCB Remediation Waste as defined in 40 CFR §761.3, and to mitigate the current and future risks associated with the Site soils as supported by the MCP risk characterization. A figure illustrating the area targeted for excavation is presented in Appendix B.

4.2 Plan

The aforementioned RAM activities necessary to remove the HF-31 PCB Remediation Waste (as defined in 40 CFR §761.3), and to achieve a condition of No Significant Risk at the Site are detailed in this section of the plan.

4.2.1 Soil Excavation/Removal

RAM activities for the Site include soil excavation, confirmatory sampling where required, and off-site disposal of impacted soil. Safety, security and erosion/sedimentation control measures will be implemented prior to remedial activities. Following soil removal, the excavations will be backfilled with clean backfill, topped with approximately six inches of loam, and re-seeded or finished with the installation of new sod.

Soil excavation will take place in two steps. First, soil categorized as PCB Remediation Waste will be removed. Second, remaining soil to accomplish MCP risk reduction goals will be removed. All customary utility mark-out procedures, including the use of Dig-Safe, will be employed to ensure that no utilities are located within the vicinity of remedial activities, or if utilities are present, to help guide appropriate contingency actions. Locations of utilities will be clearly marked.

4.2.1.1 Excavation of PCB Remediation Waste Soil

The following outlines the approach to the excavation of PCB Remediation Waste Soil, which is subject to EPA review and comment/approval:

Soil excavation will begin at sample location HF-31D. Prior to excavation, confirmation sampling will be performed in-situ near sample location HF-31D in accordance with 40 CFR §761 (Subpart O) as described below. The impacted soil is planned to be directly loaded into a lined roll-off and transported off-site for disposal at a chemical waste landfill conforming to the requirements of 40 CFR Part 761.75. Excavated soils will be managed as described in the *Soil Management Plan* in Appendix C.

Confirmation grab samples will be collected in-situ in advance of excavation at sample location HF-31D. Confirmation samples will be taken in accordance with 40 CFR §761.283 to evaluate excavation limits sufficient to remove all PCB Remediation Waste soils. Confirmatory samples will be taken in as follows and submitted for laboratory analysis of PCBs by SW-846 Method 8082A:

- One sample per 1.5 meters of sidewall;
- One sample in the center of each 1.5 meter grid at the bottom of the excavation,

Additional pre-excavation confirmatory soil samples will be collected if any confirmatory sample result indicates a concentration greater than or equal to 50 mg/kg, or if additional excavation is required to achieve MCP risk reduction goals.

Once confirmation grab samples determine the limits of PCB impacted soils greater than 50 mg/kg, excavation of soils will be performed. To ensure that all PCB Remediation Wastes have been removed, the pre-determined excavation limits will be over excavated 6 to 12 inches per EPA's request.

All records of the excavation, confirmatory sampling, manifests, and certificates of disposal for this performance-based disposal activity will be maintained and included in either a MCP RAM Status Report, or a MCP RAM Completion Report, as appropriate. The RAM-related MCP documents will be available for inspection at any time by a representative of the EPA at the MassDEP Office located in Lakeville, Massachusetts or on the City's website.

Representative quality control samples will also be collected during implementation of this excavation. This will include field duplicate, matrix spike and matrix spike duplicate samples collected at a frequency of one per twenty samples. All sampling equipment will be decontaminated as described in Section 4.2.1.1

Analytical data collected during the previous investigations from the excavation areas may be used to obtain pre-approval of soil acceptance, where necessary, from a disposal facility prior to excavation activities to allow live loading of the soils. This may be supplemented by further soil data collection in advance of soil shipment to satisfy specific facility acceptance criteria, where needed. As a contingency, loaded roll-off containers may be sampled and analyzed prior to off-

site disposal transport to satisfy facility acceptance criteria; however, the City's preference is to conduct the soil removal as a live load project.

Equipment that comes into direct contact with soils determined to be actual or potential PCB Remediation Waste will be decontaminated by one of the methods referenced below.

- Self-Implementing Decontamination Procedures, as set forth under 40 CFR Part 761.79(c); or
- Aqueous cleaning followed by verification sampling as set forth under 40 CFR Part 761, Subpart P.

See Appendix F for relevant excerpts from 40 CFR Part 761.

The City proposes a prescriptive decontamination approach per 40 CFR Part 761.79(c)(2)(ii) that will avoid delays due to laboratory turn-around for verification wipe sampling. The actual procedures implemented will be documented in the RAM Status and/or Completion Report, but will rely on the swabbing of moveable equipment, tools and sampling implements that have contacted PCBs/PCB Remediation Waste with a solvent.

Regardless of the selected decontamination method, tools, moveable equipment, and sampling implements that comes into direct contact with soil determined to be actual or potential PCB Remediation Waste will be decontaminated prior to leaving the Site.

4.2.1.2 Excavation to Complete MCP Risk Reduction

Following completion of the excavation of PCB Remediation Waste at sample location HF-31D, soils will be excavated to the pre-determined limits (bound by samples HF-31A, HF-31B, HF-31G, and HF-31H) as identified in the figure presented in Appendix B. To accomplish the MCP risk reduction goals, approximately 841 square feet of surface area will be removed to a depth of 3 feet and replaced. The vertical and horizontal extent of impacted soils to be removed is identified in Appendix B. The total volume of soil to be excavated is approximately 94 cubic yards.

The impacted soil is planned to be directly loaded into a lined roll-off and transported off-site for disposal at an approved chemical waste landfill. Excavated soils will be managed as described in the *Soil Management Plan* in Appendix C. Analytical data collected during the previous investigations, or supplemental investigations, from the excavation areas will be used to obtain pre-approval of soil acceptance, where necessary, from a disposal facility prior to excavation activities. The temporary storage of the excavated soils in a roll-off at a City owned off-site location is not anticipated, but is retained as an option should it be logistically necessary to meet project needs. Under this scenario, soil roll-off containers may be sampled and analyzed prior to off-site disposal transport where needed to characterize the soils for evaluation of disposal options.

4.2.1.3 Other Excavation Related Activities

During soil removal activities, appropriate controls will be employed to monitor and control potential releases of impacted soils. Such controls include air monitoring and dust suppression for fugitive dust, control of precipitation run-on and run-off and decontamination of equipment and vehicles that contact impacted soil.

Uncontrolled off-site transport of impacted materials via vehicle traffic will be achieved through removal of soil materials from the body and tires of all vehicles prior to exiting the Site. Vehicles will be visually inspected to ensure no visible soil materials are present on the body or on the tires.

During all excavation activities, site health and safety monitoring will be conducted in accordance with the HASP. Security will be maintained to prevent access by unauthorized and non-essential personnel within the work area. Excavation dewatering is not anticipated to be necessary as the proposed limit of the excavation is above the groundwater table. Measures will be implemented to minimize impacts to the environment.

Prior to excavation, the Contractor will secure the area by installing a temporary chain link fence around the work area and based on field observations, by deploying hay bales to control runoff, if necessary. Steel plates will be placed on lawn areas accessed by heavy equipment. Roll-off containers will also be placed on the steel plates or driveways. The use of steel plates will minimize contact with soils and therefore minimize decontamination of heavy equipment.

Once excavation activities are completed, backfilling will occur. The certified clean granular replacement material and topsoil from off-site sources will be used as the backfill materials. The fill will be placed into the excavation and built up in successive layers until the required elevations are reached. The fill will be brought up on essentially level lifts not exceeding twelve inches in un-compacted thickness and will be compacted by standard methods. Each lift of material will be compacted so as to secure a dense, stable and thoroughly compacted mass. Filling operations will continue until the fill has been brought up to the finished grade, making proper allowances for six inches of topsoil, and re-seeding.

4.2.2 Dust Suppression

During activities that involve the movement or other disturbance of potentially impacted soils, dust suppression consisting of water sprays will be routinely applied, and potential fugitive dust emissions will be monitored simultaneously (see Section 6.4). Water sprays will be applied as a heavy mist, rather than a water stream, to ensure the water is aerosolized to maximize dust capture/interception and thus suppression. Increased water sprays (e.g., additional hoses and/or water volume) will be implemented based on visual observations of effectiveness and instrumented 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 suitable for the conditions can be reliably implemented.

4.3 Implementation Schedule

The RAM activities will be scheduled following approval of this plan and be completed in approximately two weeks. The City anticipates that this work will begin as soon as feasible following the concurrence of MassDEP and EPA. TRC anticipates submittal of a RAM Completion Report within 60 days of the completion of all RAM activities, or a RAM Status Report if the outcomes of activities do not warrant a RAM Completion Report

5.0 REMEDIATION WASTE MANAGEMENT STATEMENT

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

The estimated volume of excavated soil that could be potentially transported from the Site as part of this RAM is approximately 94 cubic yards. The *Soil Management Plan* provided in Appendix C outlines the plan for soil management at the Site.

5.1 On-Site Soil Management

Impacted soil excavation will take place with qualified field oversight personnel. Contractors will be required to implement means to prevent fugitive dust generation (e.g., water sprays).

Excavated soils associated with the RAM will be direct loaded into roll-offs for off-site disposal, and segregated into the following soil types by the degree of impact and proposed disposal facility:

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

Soils types are further discussed in *Soil Management Plan* provided in Appendix C. The Site or work area will be secured by a temporary fence around the perimeter that limits unauthorized entry and contact with materials by trespassers. Lined and covered roll-offs will be used for PCB Remediation Waste excavated at sample location HF-31D. The roll-offs will be lined with polyethylene and covered to prevent leakage and storm water accumulation. Roll-offs will be of appropriate specification to allow over the road transport of the soils stockpiled therein as a contingency.

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

Excavated soil that will be transported from the Site will be characterized as appropriate for off-site reuse, recycling, and/or disposal at a suitable facility. Several suitable off-site facilities are being considered, but the facility locations have not been finalized and will be coordinated through the City's selected remediation contractor. Analytical data collected during the previous investigations at the Site will be used to explore disposal and pre-treatment options. Samples of stockpiled soils will be taken and submitted for laboratory analysis in order to characterize the excavated soil. The soil sample laboratory data will initially be compared against Massachusetts reuse, recycle, and disposal criteria in accordance to MassDEP Policy# COMM-97-001 and Interim Policy #WSC-94-400.

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

Based on laboratory analytical results, soils at sample location HF-31D constitute PCB Remediation Waste pursuant to EPA's PCB regulations under 40 CFR Part 761 and require management as such. Soils determined to be PCB Remediation Waste will be loaded and transported off-site for disposal in accordance with 40 CFR Part 761.61.

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

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

5.3 PCB Decontamination Fluid and Non-Liquid Cleaning Material Management

Two potential TSCA-compliance decontamination approaches are proposed as noted in Section 4.2.1.1, a Self-Implementing Decontamination Procedure described under 40 CFR Part 761.79(c) and an aqueous cleaning procedure followed by verification sampling as allowed for under 40 CFR Part 761, Subpart P of the PCB regulations.

Under the Subpart P aqueous decontamination/verification approach, the spent aqueous decontamination fluids produced will be managed per the PCB decontamination standards described under 40 CFR Part 761.79(b)(ii) and (iii). Under this regulation, the decontamination standard for PCBs in water is less than 3 micrograms per liter (ug/L) total PCBs for discharge to navigable waters or treatment works and less than 0.5 ug/L total PCBs for unrestricted reuse. All of the proposed liquid waste streams are aqueous and subject to this standard, but waste liquids (such as spent Simple Green™) should be managed in a separate container to the degree

practicable. If the analytical results indicate less than 3 ug/L PCBs, the decontamination fluids may be discharged to the public sanitary sewer (assuming compliance with City PCB discharge permits). If analytical results indicate less than 0.5 ug/L PCBs, the liquids may be discharged to the ground surface at the site.

Under the self-implementing decontamination approach, where solvent containing rags may be used to swab/decontaminate non-porous surfaces, spent solvents and solvent soaked rags will be managed for disposal via incineration at a permitted facility per 40 CFR Part 761.79(g)(3), (4) or (5).

Non-liquid cleaning materials (e.g., rags, gloves, brushes, booties) and personal protective equipment (PPE) waste will be managed in accordance with §761.61(a)(5)(v), which allows for disposal as solid waste.

6.0 ENVIRONMENTAL MONITORING PLAN

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

This section summarizes the protective measures that will be employed to minimize and control any potential pollution releases and to preserve environmental conditions at the Site.

Remedial activities at the Site will be conducted in the areas shown in the figure provided in Appendix B. All applicable work zones will be delineated and maintained throughout the duration of the project to closely monitor site activities, quality control and safety to ensure that the project objectives are achieved. In addition, access to the work zone will be regulated to prevent unauthorized entry.

6.1 Protection of Land Resources

The activities covered under this environmental monitoring plan specifically include all areas associated with soil excavation activities at the Site. Protection of areas will be performed during mobilization, excavating, staging, and treatment of materials and demobilization. Disturbed areas will be restored as necessary to their existing condition following completion of remedial activities.

All trucks and heavy equipment will be decontaminated prior to leaving the Site to ensure that any loose soil debris does not impact outside properties. All heavy equipment will be decontaminated at an area that will be established in advance. This area will be used to support dry decontamination procedures (i.e., brushing-off of soil, etc.). All vehicles/equipment leaving the Site must stop and be inspected by TRC to ensure any excess soil or debris is removed from the vehicle and its tires, with the exception of the PCB Remediation Waste excavation at sample location HF-31D where procedures outlined in Section 4.2.1.1 will be followed

6.1.1 Temporary Protection of Disturbed Areas

Preventative erosion and sedimentation control measures will be implemented in order to limit and retard run-off within the established work zone limits as necessary based on field observations. All disturbed areas will be protected as described in the Erosion Control and Sedimentation procedures in Section 6.1.2.

6.1.2 Erosion and Sedimentation Control Procedures

Erosion and sedimentation controls may be installed depending on field observations. As the Site generally exhibits a flat topography, and there are no catch basins located in the vicinity of the excavations, the use of sedimentation and erosion control measures is not anticipated to be required. If required based on field observations and Site conditions, sedimentation and erosion controls will be constructed based on a supplement to this RAM. Sedimentation areas will be inspected daily to maintain compliance and to avoid siltation of surface water and groundwater.

At the completion of remedial activities, all sedimentation and erosion control measures will be removed and the area will be restored to its existing condition.

6.2 Noise Protection

TRC will provide hearing protection to employees involved in the remedial activities to minimize potential exposures.

6.3 Field Screening Associated with Soil Removal

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

6.3.1 Jar-Headspace Field Screening of Soils

VOCs are not COCs for Site soil targeted by this RAM Plan. As a precaution, soil samples will be periodically screened via the MassDEP jar-headspace method for the potential presence of VOCs based on professional judgment.

6.4 Air Monitoring

On-site air monitoring will be conducted to evaluate Site working conditions to minimize exposures to workers and nearby residents, as well as to collect and record data on general conditions.

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 contaminated 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 (PM_{10}). Background samples will be collected for at least 15 minutes at each location prior to the start of site 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/m^3). This instrumentation has an accuracy of 0.001 mg/m^3. 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 (NAAQS) of 150 $\mu g/m^3$ 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 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 implemented based on visual observations of effectiveness and instrumented 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 suitable for the conditions can be reliably implemented.

6.4.2 Instrumented VOC Air Monitoring

VOC air monitoring will be performed using a photo-ionization detector (PID) to monitor for the presence of VOCs within the work area breathing zone. Based on previously existing site data, significant VOC emissions are not expected during construction, but field monitoring of the breathing zone for VOCs will be conducted as a precaution.

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

6.4.3 Instrumented Meteorological Monitoring

A portable digital meteorological station will be deployed during the execution of the RAM to monitor and record temperature, wind speed and direction, wind chill, and daily and accumulated rainfall, barometric pressure, humidity, and dew point. These data will be collected continuously and downloaded for record preservation regularly. Field oversight personnel will also periodically manually record instrument readings during the progress of the work to monitor field conditions and a basis for checking the recorded data. Conditions at the time of a weather-related suspension of field activities (e.g., excessive winds impacting the effectiveness of dust suppression) will also be recorded manually and checked against the data recorded by the instrument.

7.0 FEDERAL, STATE & LOCAL PERMITS

7.1 Federal Permit Requirements

There are no known Federal environmental permit requirements. A PCB Remediation Notification letter was issued by the City to the United States Environmental Protection Agency (EPA) on July 14, 2010. Following a teleconference with EPA, an amendment to the PCB Remediation Notification letter was issued to EPA on October 21, 2010, which served to clarifying items discussed. A copy of the letters are included in Appendix A.

7.2 State Permit Requirements

There are no known State environmental permit requirements.

7.3 Local Permit Requirements

There are no known Local environmental permit requirements.

7.4 Miscellaneous Fees, Notices, and Transportation Documentation

Because the Site is not Tier Classified under the MCP, an $800 RAM Plan fee must be submitted to MassDEP concurrent with this RAM Plan. The $800 fee has been submitted to the MassDEP lock box at DEP, P.O. Box 4062, Boston, MA, 02211-4062. Appendix D contains a copy of the check for the RAM Plan fee for documentation purposes.

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

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

8.0 SEAL & SIGNATURE OF LICENSED SITE PROFESSIONAL

The Licensed Site Professional (LSP) overseeing this RAM is:

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

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

David M. Sullivan

11/24/10

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

Date

Stamp

9.0 CERTIFICATION OF FINANCIAL RESOURCES

In accordance with 310 CMR 40.0442(5) of the MCP, the City of New Bedford attests to the availability of sufficient financial resources for the transportation and recycling or disposal of excess and unsuitable soils.

10.0 OTHER RELEVANT INFORMATION

10.1 Public Involvement

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

Citizens had a 20-day public comment period during which they were welcome to submit questions and comments about this RAM plan to the City for consideration. The City prepared written responses to the questions and comments received, and the City provided a copy of those responses to both citizens and MassDEP before the plan was finalized and submitted to MassDEP.

11.0 REFERENCES

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

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

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TABLES

TABLE 1
Summary of Analytical Detected Results for HF-31 Area Soil Samples
New Bedford High School
New Bedford, Massachusetts

Analysis	Analyte	S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3	RC S-1**	TSCA	Sample Location: HF31-0.5-1+2.5-3	HF-31A		HF-31B		HF-31C			HF-31D		HF-31G	HF-31H
								Sample Depth (ft.): 0.5-3	0-1	1-3	0-1	1-3	0-1	1-3	1-3	0-1	1-3	1-3	1-3
								Sample Date: 12/30/2004	4/2/2009	4/2/2009	4/2/2009	4/2/2009	4/2/2009	4/2/2009	4/2/2009 Field Dup	4/2/2009	4/2/2009	4/2/2009	4/2/2009
PCBs																			
(mg/kg)	Aroclor 1254	2	2	3	3	2	1	**2.26**	**1.35 J**	**2.49 J**	**0.310 J**	**2.66 J**	**2.88 J**	**5.32 J**	**7.31 J**	**0.597 J**	**71.6 J**	**0.334 J**	**0.565 J**
	Aroclor 1260	2	2	3	3	2	1	0.056 U	**0.291 J**	0.217 U	0.0554 U	0.219 U	0.571 U	0.376 U	0.550 U	0.0532 U	3.36 U	0.0535 U	**0.355 J**
	Aroclor 1262	2	2	3	3	2	1	**0.293**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Total PCBs	2	2	3	3	2	1	**2.553**	**1.641 J**	**2.49 J**	**0.310 J**	**2.66 J**	**2.88 J**	**5.32 J**	**7.31 J**	**0.597 J**	**71.6 J**	**0.334 J**	**0.920 J**
Metals																			
(mg/kg)	Mercury	20	20	30	30	20	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	20	20	20	20	20	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	1,000	1,000	3,000	3,000	1,000	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	100	100	200	200	100	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	2	2	30	30	2	N/A	NA	**0.51**	**0.47**	**0.41**	**0.49**	**0.29**	**0.34**	NA	**0.62**	**1.24**	NA	NA
	Chromium	30	30	200	200	30	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	300	300	300	300	300	N/A	NA	**194**	**168**	**79.7**	**164**	**31.5**	**82.9**	NA	**192**	**441**	NA	NA
	Nickel	20	20	700	700	20	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	100	100	200	200	100	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium	600	600	1,000	1,000	600	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	2,500	2,500	3,000	3,000	2,500	N/A	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; below quantitation limit.

NA - Sample not analyzed for the listed analyte.

N/A - Not applicable.

U - Compound was not detected at specified quantitation limit.

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

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

Values shown in bold and outlined exceed TSCA but are less than the listed MassDEP Method 1 standards.

PCBs - Polychlorinated Biphenyls.

RC - Reportable Concentration.

TSCA - Toxic Substances Control Act criteria.

(1) - SW-846 Chapter 7, Table 7-1, *Maximum Concentration of Contaminants for Toxicity Characteristic*.

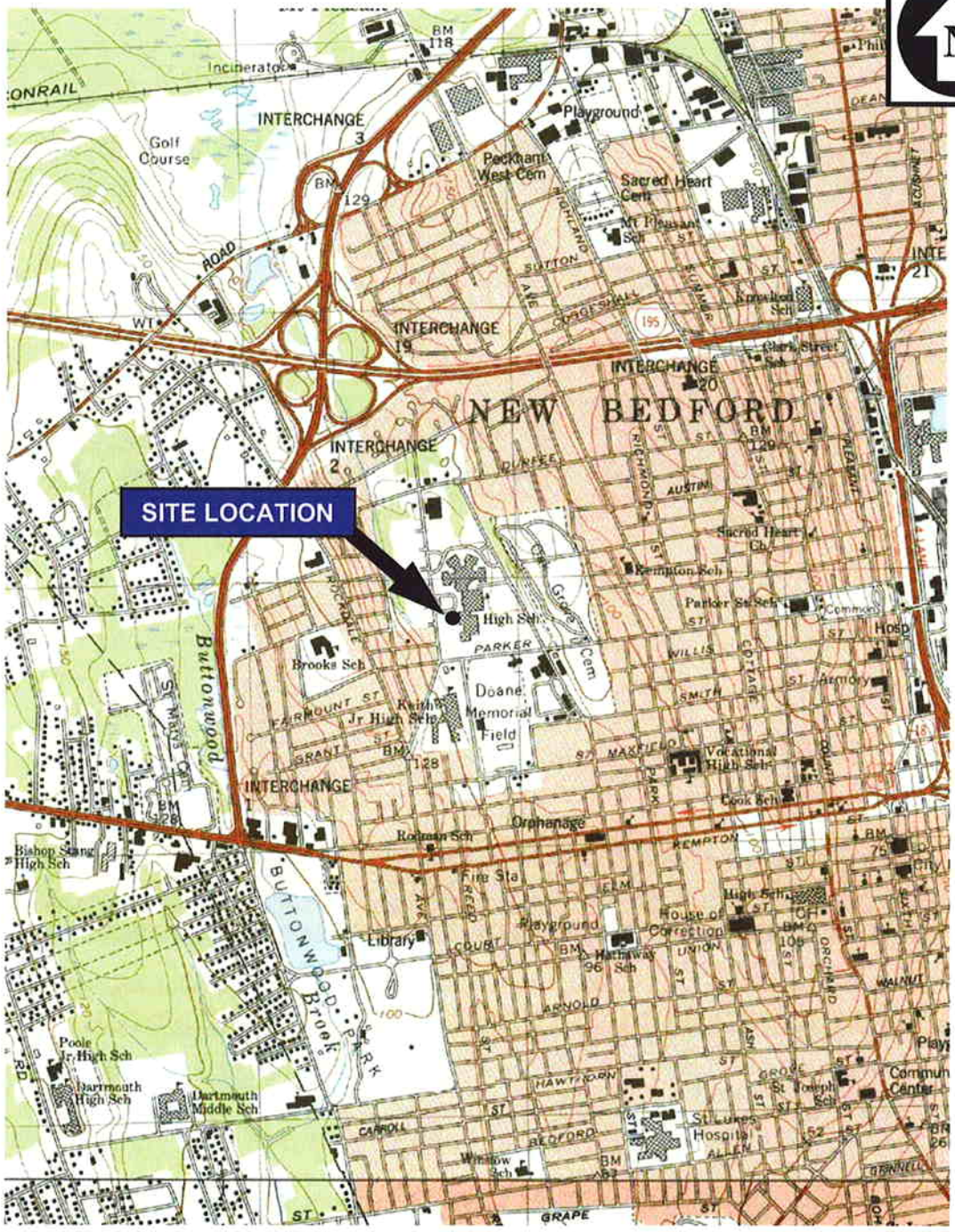
** - for Reference purposes only.

TABLE 2
Summary of Dioxin Investigation Results at Sample Location HF-31D
New Bedford High School
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3	RC S-1*	TSCA	HF-31D		
		Sample Depth (ft.):							0-1	1-3	4-6
		Sample Date:							4/15/2010	4/15/2010	4/15/2010
PAHs											
(mg/kg)	2-Methylnaphthalene		80	300	80	500	0.7	N/A	0.19 U	0.37 U	0.45 U
	Acenaphthene		1,000	1,000	3,000	3,000	4	N/A	0.19 U	0.37 U	0.45 U
	Acenaphthylene		600	10	600	10	1	N/A	0.19 U	0.37 U	0.45 U
	Anthracene		1,000	1,000	3,000	3,000	1,000	N/A	0.19 U	**1.1**	0.45 U
	Benzo(a)anthracene		7	7	40	40	7	N/A	0.19 U	**1.5**	**0.68**
	Benzo(a)pyrene		2	2	4	4	2	N/A	0.19 U	**1.4**	**0.64**
	Benzo(b)fluoranthene		7	7	40	40	7	N/A	0.19 U	**1.6**	**0.98**
	Benzo(g,h,i)perylene		1,000	1,000	3,000	3,000	1,000	N/A	0.19 U	**0.49**	0.45 U
	Benzo(k)fluoranthene		70	70	400	400	70	N/A	0.19 U	**0.68**	0.45 U
	Chrysene		70	70	400	400	70	N/A	0.19 U	**1.6**	**0.66**
	Dibenz(a,h)anthracene		0.7	0.7	4	4	0.7	N/A	0.19 U	0.37 U	0.45 U
	Fluoranthene		1,000	1,000	3,000	3,000	1,000	N/A	0.19 U	**3.0**	**0.90**
	Fluorene		1,000	1,000	3,000	3,000	1,000	N/A	0.19 U	**0.59**	0.45 U
	Indeno(1,2,3-cd)pyrene		7	7	40	40	7	N/A	0.19 U	**0.67**	0.45 U
	Naphthalene		40	500	40	1,000	4	N/A	0.19 U	0.37 U	0.45 U
	Phenanthrene		500	500	1,000	1,000	10	N/A	0.19 U	**4.0**	**1.0**
	Pyrene		1,000	1,000	3,000	3,000	1,000	N/A	0.19 U	**2.0**	**0.64**
PCB Aroclors											
(mg/kg)	Aroclor-1016		2	2	3	3	2	1	0.11 U	0.11 U	0.13 U
	Aroclor-1221		2	2	3	3	2	1	0.11 U	0.11 U	0.13 U
	Aroclor-1232		2	2	3	3	2	1	0.11 U	0.11 U	0.13 U
	Aroclor-1242		2	2	3	3	2	1	0.11 U	0.11 U	0.13 U
	Aroclor-1248		2	2	3	3	2	1	0.11 U	0.11 U	0.13 U
	Aroclor-1254		2	2	3	3	2	1	**0.23**	**0.73**	0.13 U
	Aroclor-1260		2	2	3	3	2	1	0.11 U	0.11 U	0.13 U
	Aroclor-1262		2	2	3	3	2	1	0.11 U	0.11 U	0.13 U
	Aroclor-1268		2	2	3	3	2	1	0.11 U	0.11 U	0.13 U
	Total PCBs		2	2	3	3	2	1	**0.23**	**0.73**	0.13 U
PCB Congeners											
(pg/g)	***Total PCBs*** [a]		2.00E+06	2.00E+06	3.00E+06	3.00E+06	2.00E+06	1.00E+06	*1.93E+05*	*7.44E+05*	***8.19E+04***
	Total PCBs [b]		2.00E+06	2.00E+06	3.00E+06	3.00E+06	2.00E+06	1.00E+06	*1.93E+05*	*7.35E+05*	***8.19E+04***
	Dioxin-like PCB TEQs (ND=0 EMPC=EMPC)		20	20	50	50	20	N/A	*3.07*	*13.36*	***1.96***
	Dioxin-like PCB TEQs (ND=DL/2; EMPC=EMPC)		20	20	50	50	20	N/A	*3.09*	*13.43*	***1.99***
Dioxins											
(pg/g)	***TEQs (ND=0; EMPC=EMPC)***		20	20	50	50	20	N/A	*13.64*	***26.64***	***20.09***
	TEQs (ND=DL/2; EMPC=EMPC)		20	20	50	50	20	N/A	*13.66*	***26.66***	***20.11***
TEQ Summation**											
(pg/g)	***TEQs (ND=0; EMPC=EMPC)***		20	20	50	50	20	N/A	***16.70***	***39.99***	***22.05***
	TEQs (ND=DL/2; EMPC=EMPC)		20	20	50	50	20	N/A	***16.75***	***40.09***	***22.09***
Metals											
(mg/kg)	Antimony		20	20	30	30	20	N/A	4.4 U	4.3 U	5.2 U
	Arsenic		20	20	20	20	20	N/A	2.7 U	**3.0**	**8.8**
	Barium		1,000	1,000	3,000	3,000	1,000	N/A	**70**	96	**380**
	Beryllium		100	100	200	200	100	N/A	0.27 U	0.27 U	**0.81**
	Cadmium		2	2	30	30	2	N/A	**0.35**	**0.82**	**0.69**
	Chromium		30	30	200	200	30	N/A	**24**	**9.8**	**20**
	Lead		300	300	300	300	300	N/A	**100**	**170**	**480**
	Nickel		20	20	700	700	20	N/A	**6.0**	**8.2**	**43**
	Selenium		400	400	800	800	400	N/A	5.5 U	5.4 U	6.5 U
	Silver		100	100	200	200	100	N/A	0.55 U	0.54 U	**1.2**
	Thallium		8	8	60	60	8	N/A	3.3 U	3.2 U	3.9 U
	Vanadium		600	600	1,000	1,000	600	N/A	**13**	**8.5**	**32**
	Zinc		2,500	2,500	3,000	3,000	2,500	N/A	**76**	**130**	**220**
	Mercury		20	20	30	30	20	N/A	**0.16**	**0.27**	**0.40**

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
pg/g - picograms per gram (dry weight).
EMPC - Estimate Maximum Possible Concentration.
NA - Sample not analyzed for the listed analyte.
N/A - Not applicable.
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.
Values shown in Bold and shaded type exceed one or more of the listed MassDEP Method 1 standards.
Values shown in Bold and shaded type exceed TSCA but are less than the listed Method 1 standards.
PAHs - Polynuclear Aromatic Hydrocarbons.
PCBs - Polychlorinated Biphenyls.
RC - Reportable Concentration.
TSCA - Toxic Substances Control Act criteria.
TEQs - Toxic Equivalents of dioxins/furans; PCB Congengers TEQs calculated using 2005 WHO Toxicity Equivalency Factors (TEFs), Dioxins TEQs calculated using 1991 MassDEP Derived Toxicity Equivalency Factors (TEFs).
(a) - Calculated by summation of PCB homolog groups.
(b) - Calculated by summation of individual congeners.
* - For reference purposes only.
** - Sum of Dioxin-like PCB Congeners TEQ and Dioxins TEQ.
- sample locations to be either excavated, or covered by pavement or engineered barrier.

FIGURES



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

0 1000 2000 3000

scale in feet

QUADRANGLE LOCATION

T:\E_CAD\115058\TOPO PCB REMED.ppt

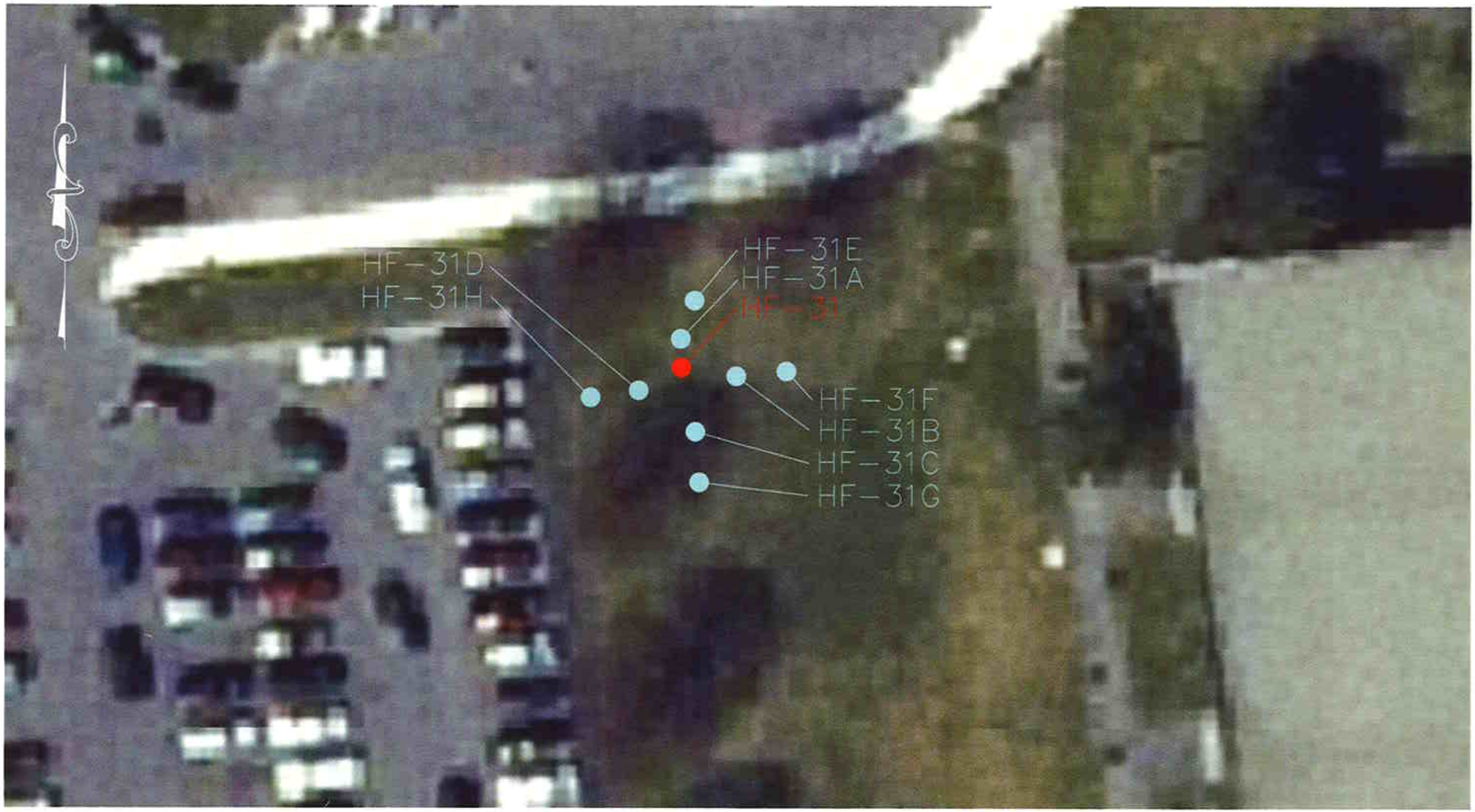
NEW BEDFORD HIGH SCHOOL
NEW BEDFORD, MASSACHUSETTS

PCB REMEDIATION SITE LOCATION MAP

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

Drawn: HWB	SCALE: AS SHOWN
Checked: DP	Date: JUNE 2010

FIGURE 1



LEGEND:

- BETA BORINGS
- TRC BORINGS

APPROXIMATE GRAPHIC SCALE

0' 10' 20' 30' 60'

NEW BEDFORD HIGH SCHOOL
NEW BEDFORD, MASSACHUSETTS

HF-31 AREA
SAMPLE LOCATIONS

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

DRAWN BY: HWB	DATE: AUG 2010
CHECKED BY: DNP	

FIGURE 2

FILE: T:\E_CAD\115058\PCB REMED HF-31.dwg

APPENDIX A

ADVANCE CORRESPONDENCE WITH EPA

ENVIRONMENTAL STEWARDSHIP DEPARTMENT/
NEW BEDFORD CONSERVATION COMMISSION

CITY OF NEW BEDFORD
SCOTT W. LANG, MAYOR

July 14, 2010

Kimberly N. Tisa, PCB Coordinator
United States Environmental Protection Agency
5 Post Office Square, Suite 100
Mail Code: OSRR07-2
Boston, Massachusetts 02109-3912

RE: Polychlorinated Biphenyl (PCB) Remediation Notification Letter
New Bedford High School Release Abatement Measure Plan
230 Hathaway Boulevard, New Bedford, Massachusetts 02740

Dear Ms. Tisa:

This letter serves as notification that the City of New Bedford (City) will conduct a performance-based disposal action to remove PCB Remediation Waste (soil) at the New Bedford High School (NBHS) property located at 230 Hathaway Boulevard, New Bedford, Massachusetts consistent with 40 CFR Subpart 761.61(b). The removal will take place during the performance of a Massachusetts Contingency Plan (MCP; 310 CMR 40.0000) Release Abatement Measure (RAM) to address impacted soils at NBHS. This disposal activity will achieve compliance with both 40 CFR Part 761 and the MCP. The activity will center on soil removal in the vicinity of soil boring HF-31 on the west side of the NBHS campus (see Figure 1).

PCBs were detected at a concentration greater than 50 milligrams per kilogram (mg/kg) during the delineation of PCB impacted soils at sample location HF-31. At sample location HF-31, samples were collected at six sample locations in a grid pattern having a 10-foot lateral separation around the original sampling point (sample locations identified as HF-31A, HF-31B, HF-31C, HF-31D, HF-31G, and HF-31H) at 0-1 foot and 1-3 foot intervals and analyzed for PCBs, cadmium, and lead for delineation purposes. Samples were collected at locations HF-31E and HF-31F, but not analyzed, as sample locations HF-31A and HF-31B exhibited acceptable results. Total PCBs were detected at sample location HF-31D at 71.6 mg/kg in the 1 -3 foot sampling interval. Using MCP risk assessment procedures, the excavation area was determined to be bound by samples HF-31A, HF-31B, HF-31G, and HF-31H. The removal of the pre-defined area of soil will meet MCP risk reduction goals and will result in the removal of all soils shown to exhibit a total PCB concentration greater than or equal to 50 mg/kg. The sample results are presented in Table 1. Sample locations are identified in Figure 2.

TRC estimates that approximately 140-145 tons of impacted soil will be excavated, loaded directly into lined storage containers, and then all the excavated soils will be transported for disposal to either Model City in New York or the EQ/Wayne Disposal Landfill in Michigan. The dimensions of area to be excavated are approximately 29 feet by 29 feet by 3 feet deep.

ROOM 304 • 133 WILLIAM STREET • NEW BEDFORD, MA 02740
TEL. (508) 991-6188 • FAX (508) 961-3045 • TYY (508) 979-1661

Following completion of this excavation, confirmation samples will be taken to confirm that all PCB Remediation Wastes have been removed. Confirmatory samples will be taken as follows:

- One sample per fifteen feet of sidewall (two samples per sidewall for a total of eight samples), and ;
- One sample in the center of each of four fifteen foot grids at the bottom of the excavation, to be composited into one composite sample (individual samples from each grid to be collected and held.

Additional excavation of soils will be performed if any confirmatory sample result is greater than or equal to 50 mg/kg, or if additional excavation is required to achieve MCP risk reduction goals. Additional confirmatory samples will be taken following the additional excavation consistent with the above.

All records of the excavation, confirmatory sampling, manifests, and certificates of disposal for this performance based disposal activity will be maintained and included in either a MCP RAM Status Report, or a MCP RAM Completion Report, as appropriate. The RAM-related MCP documents will be available for inspection at any time by a representative of the United States Environmental Protection Agency (EPA) at the Massachusetts Department of Environmental Protection Office located in Lakeville, Massachusetts or on the City of New Bedford's website.

Representative quality control samples will also be collected during implementation of this excavation. This will include field duplicate, matrix spike and matrix spike duplicate samples collected at a frequency of one per twenty samples.

All sampling equipment will be decontaminated prior to use and between each discreet sample in accordance with the self-implementing decontamination procedures as set forth under 40 CFR Part 761.79(c)(2)(i) consisting principally of a solvent swab of tools, moveable equipment, and sampling implements that come into direct contact with potentially contaminated soil. Under the self-implementing decontamination approach, spent solvents and solvent soaked rags from decontamination activities will be managed for disposal via incineration at an appropriately permitted facility per 40 CFR Part 761.79(g)(3), (4) or (5).

The sampling will be performed in accordance with TRC's site-specific health and safety plan (HASP) which outlines the anticipated hazards associated with above referenced properties.

If you have any questions concerning this letter, please do not hesitate to contact me at 508-991-6188.

Sincerely,

Scott Alfonse
Director

cc. Molly Cote, Massachusetts Department of Environmental Protection (by electronic PDF)
Cheryl Henlin, City of New Bedford (by electronic PDF)
David M. Sullivan, LSP, CHMM, TRC (by electronic PDF)

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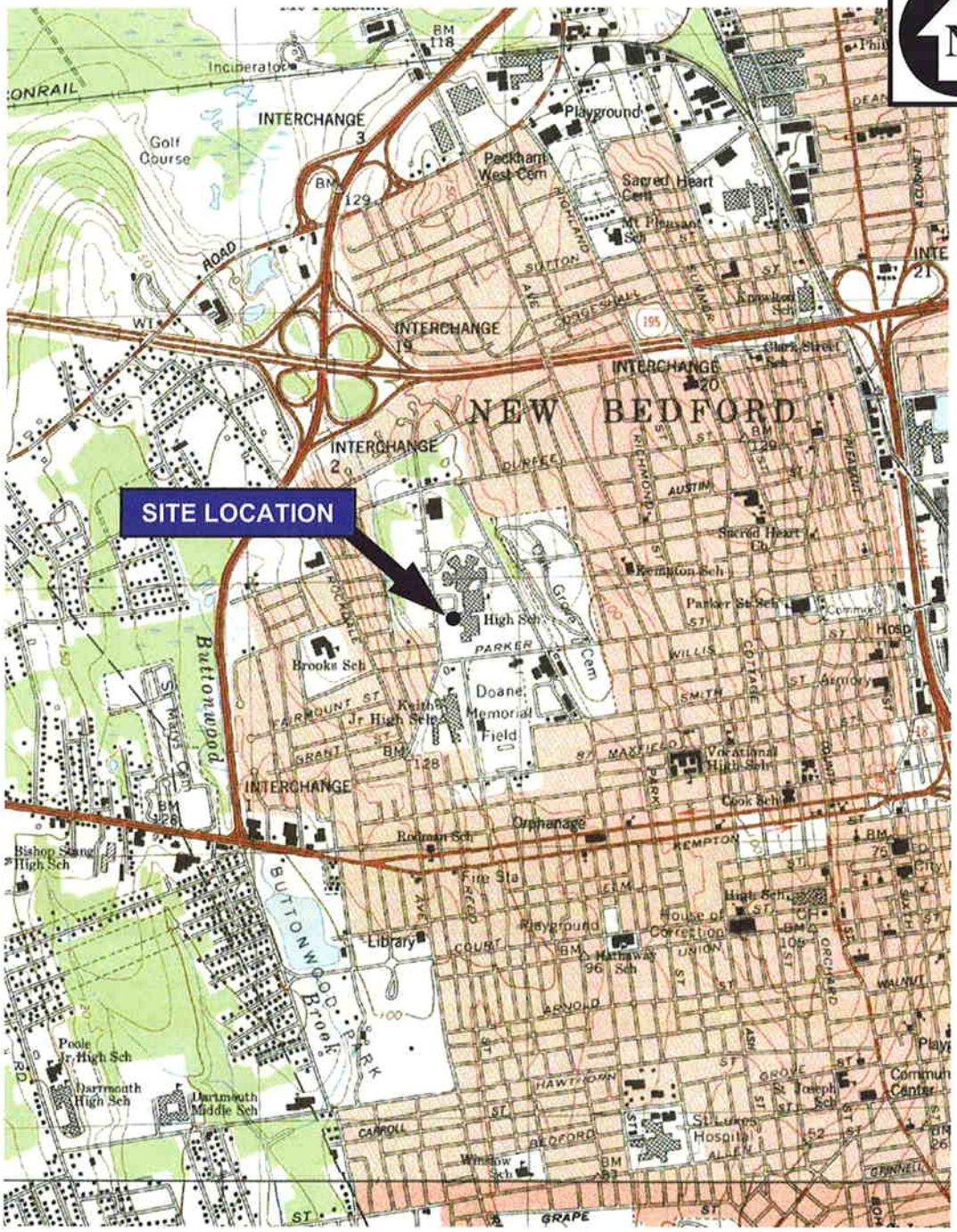
TEL. (508) 991-6188 • FAX (508) 961-3045 • TYY (508) 979-1661

Table 1
Summary of Analytical Results for Soil Samples
New Bedford High School - HP-31 Area
New Bedford, Massachusetts

Analysis	Analyte	Sample Location:						HP31-0.5-1+2.5-3	HP-31A		HP-31B		HP-31C			HP-31D		HP-31G	HP-31H
		Sample Depth (ft.)						0.5-3	0-1	1-3	0-1	1-3	0-1	1-3	1-3	0-1	1-3	1-3	1-3
		Sample Date						12/30/2004	4/2/2009	4/2/2009	4/2/2009	4/2/2009	4/2/2009	4/2/2009	4/2/2009 Field Dup	4/2/2009	4/2/2009	4/2/2009	4/2/2009
		S-1/GW-2	S-1/GW-3	S-2/GW-2	S-2/GW-3	RCS-1**	TSCA												
PCBs (mg/kg)	Aroclor 1254	2	2	3	3	2	1	2.26	1.35 J	2.49 J	0.310 J	2.66 J	2.88 J	5.32 J	7.31 J	0.597 J	71.6 J	0.334 J	0.565 J
	Aroclor 1260	2	2	3	3	2	1	0.056 U	0.291 J	0.217 U	0.0554 U	0.219 U	0.571 U	0.376 U	0.550 U	0.0532 U	3.36 U	0.0535 U	0.355 J
	Aroclor 1262	2	2	3	3	2	1	0.293	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Total PCBs	2	2	3	3	2	1	2.553	1.641 J	2.49 J	0.310 J	2.66 J	2.88 J	5.32 J	7.31 J	0.597 J	71.6 J	0.334 J	0.920 J
Metals (mg/kg)	Mercury	20	20	30	30	20	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	20	20	20	20	20	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Barium	1,000	1,000	3,000	3,000	1,000	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Beryllium	100	100	200	200	100	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cadmium	2	2	30	30	2	N/A	NA	0.51	0.47	0.41	0.49	0.29	0.34	NA	0.62	1.24	NA	NA
	Chromium	30	30	200	200	30	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lead	300	300	300	300	300	N/A	NA	194	168	79.7	164	31.5	82.9	NA	192	441	NA	NA
	Nickel	20	20	700	700	20	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Silver	100	100	200	200	100	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium	600	600	1,000	1,000	600	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zinc	2,500	2,500	3,000	3,000	2,500	N/A	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, below quantitation limit
NA - Sample not analyzed for the listed analyte
N/A - Not applicable
U - Compound was not detected at specified quantitation limit.
Values in **Bold** indicate the compound was detected.
Values shown in Bold and shaded type exceed one or more of the listed MassDEP Method 1 standards or TCLP criteria.
Values shown in bold and outlined exceed TSCA but are less than the listed MassDEP Method 1 standards.
PCBs - Polychlorinated Biphenyls.
RC = Reportable Concentration
TSCA - Toxic Substances Control Act criteria
(1) - SW-846 Chapter 7, Table 7-1, *Maximum Concentration of Contaminants for Toxicity Characteristic*
** = for Reference purposes only.



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

0 1000 2000 3000

scale in feet

QUADRANGLE LOCATION

T:\E_CAD\115058\TOPO PCB REMED.ppt

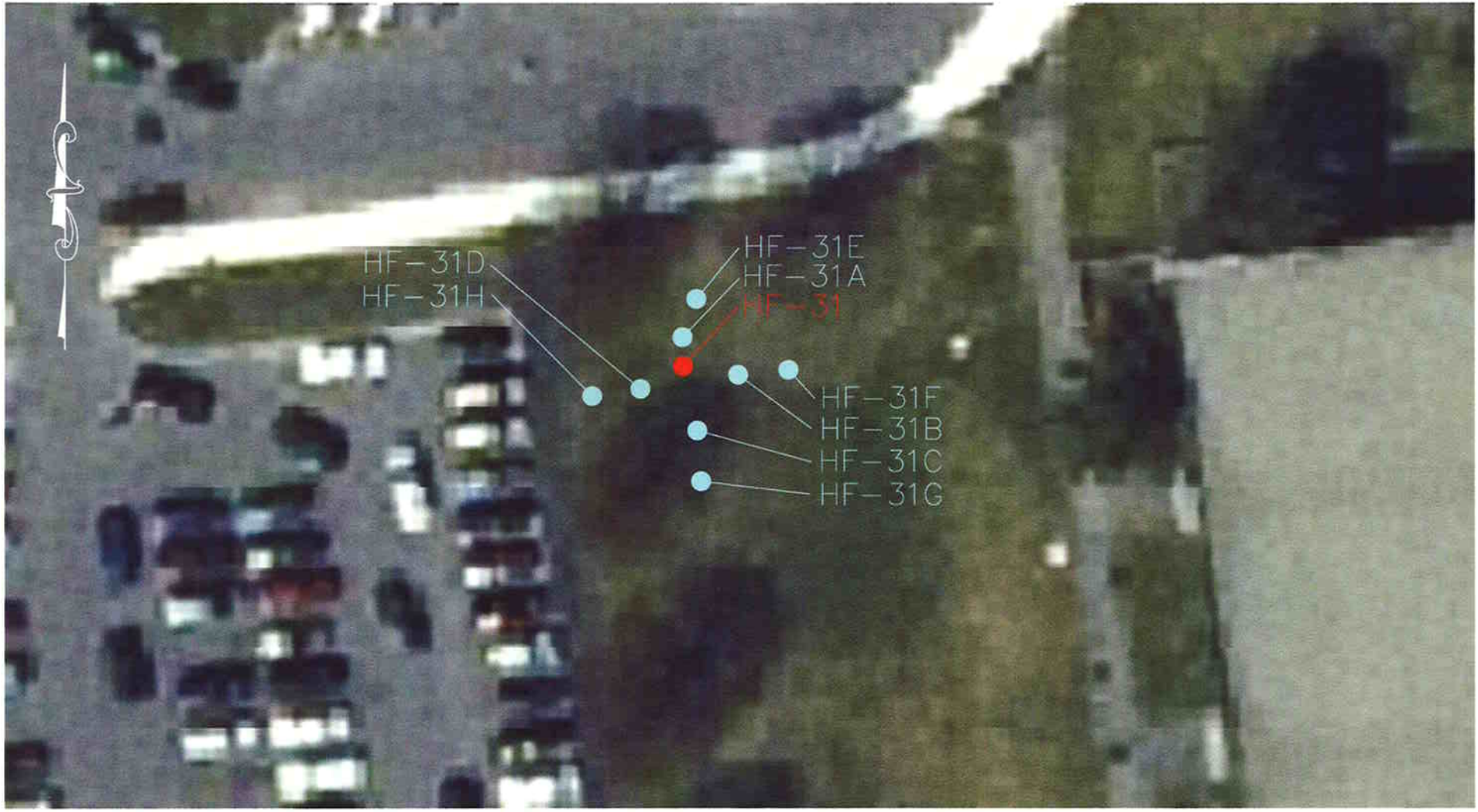
NEW BEDFORD HIGH SCHOOL
NEW BEDFORD, MASSACHUSETTS

PCB REMEDIATION SITE LOCATION MAP

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

Drawn: HWB	SCALE: AS SHOWN
Checked: DP	Date: JUNE 2010

FIGURE 1



LEGEND:

- BETA BORINGS
- TRC BORINGS

APPROXIMATE GRAPHIC SCALE

0' 10' 20' 30' 60'

NEW BEDFORD HIGH SCHOOL
NEW BEDFORD, MASSACHUSETTS

PCB REMEDIATION
SAMPLE LOCATIONS

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

FIGURE 2

DRAWN BY: HWB
CHECKED BY: DNP
DATE: JUNE 2010

FILE: T:\E_CAD\115058\PCB REMED HF-31.dwg

ENVIRONMENTAL STEWARDSHIP DEPARTMENT/
NEW BEDFORD CONSERVATION COMMISSION

CITY OF NEW BEDFORD
SCOTT W. LANG, MAYOR

TRC Reference Number: 115058

October 21, 2010

Kimberly N. Tisa, PCB Coordinator
United States Environmental Protection Agency
5 Post Office Square, Suite 100
Mail Code: OSRR07-2
Boston, Massachusetts 02109-3912

RE: Amendment
Polychlorinated Biphenyl (PCB) Remediation Notification Letter
New Bedford High School Release Abatement Measure Plan
230 Hathaway Boulevard, New Bedford, Massachusetts 02740

Dear Ms. Tisa:

This amendment letter provides clarification to the July 14, 2010 notification to the United States Environmental Protection Agency (EPA) from the City of New Bedford (City), and was prepared following teleconferences with you on July 21, October 6, and October 7, 2010. We trust that the clarification on site history, the discussed verification sampling approach, and the logistical constraints of this removal effort will be satisfactory.

The July 14, 2010 notification described the City's intention to conduct a performance-based disposal action to remove PCB Remediation Waste (soil) at the New Bedford High School (NBHS) property located at 230 Hathaway Boulevard, New Bedford, Massachusetts consistent with 40 CFR Subpart 761.61(b). As indicated in the July 14, 2010 notification, the removal will take place during the performance of a Massachusetts Contingency Plan (MCP; 310 CMR 40.0000) Release Abatement Measure (RAM) to address impacted soils at NBHS in the vicinity of sample point HF-31, which is presently under preparation.

EPA's concurrence on the July 14, 2010 notification and this amendment letter will allow the City to efficiently integrate the planning for this EPA-governed removal action with MCP regulated remedial actions currently in the planning stages and overseen by the City's Licensed Site Professional (LSP) and the Massachusetts Department of Environmental Protection (MassDEP).

133 William Street, Room 304, New Bedford, MA 02740
(508) 991-6188 Tel. · (508) 961-3045 Fax

Historical Information

NBHS opened for use in 1972, and initial site construction was completed in 1973. A thorough review of all available information indicates that soils located at NBHS were in place as of 1973. Available information indicates that the soils in the vicinity of HF-31 have remained in place, undisturbed since April 1978 (other than activities conducted with EPA and/or MassDEP acknowledgment and/or oversight such as Immediate Response Actions, soil exploration, and the New McCoy Field force main related Utility Related Abatement Measure, as well as standard grounds keeping activities), and unimpacted by unauthorized PCB uses. Therefore, these soils do not meet the definition of PCB Remediation Waste, as defined in 40 CFR §761.3. Sample location HF-31 was originally sampled as a composite sample (0.5-1 foot and 2.5-3 feet) by the City in December 2004; total PCBs were detected at 2.55 milligrams per kilogram (mg/kg). During recent (April 2009) remedial investigation activities conducted by the City to delineate PCB impacted soils at sample location HF-31 (greater than 1 mg/kg), samples were collected at locations HF-31A, HF-31B, HF-31C, HF-31D, HF-31G, and HF-31H to confirm PCB concentrations, all of which were below 50 mg/kg, except for location HF-31D, where total PCBs were detected at 71.6 mg/kg at 1-3 feet. The City's July 14, 2010 notification summarized soil delineation activities conducted to date in the vicinity of HF-31 with supporting data tables and figures.

Confirmation Sampling

To mitigate potential safety issues (e.g., open excavation) associated with a remedial action conducted at an active school facility, confirmation grab samples will be collected in advance of excavation in-situ at a collection density and sample size (e.g., 3-inch core) in accordance with 40 CFR §761 (Subpart O) to document the boundaries of the greater than 50 mg/kg soil removal. Per your request, to ensure that all soils impacted with PCBs greater than 50 mg/kg have been removed, the pre-determined excavation limits will be over-excavated 6 to 12 inches. If any individual confirmatory sample result is greater than or equal to 50 mg/kg, additional confirmatory samples will be collected to assure that the excavation achieves the desired objective.

If you have any questions concerning the clarification provided in this amendment letter, please do not hesitate to contact me at 508-991-6188.

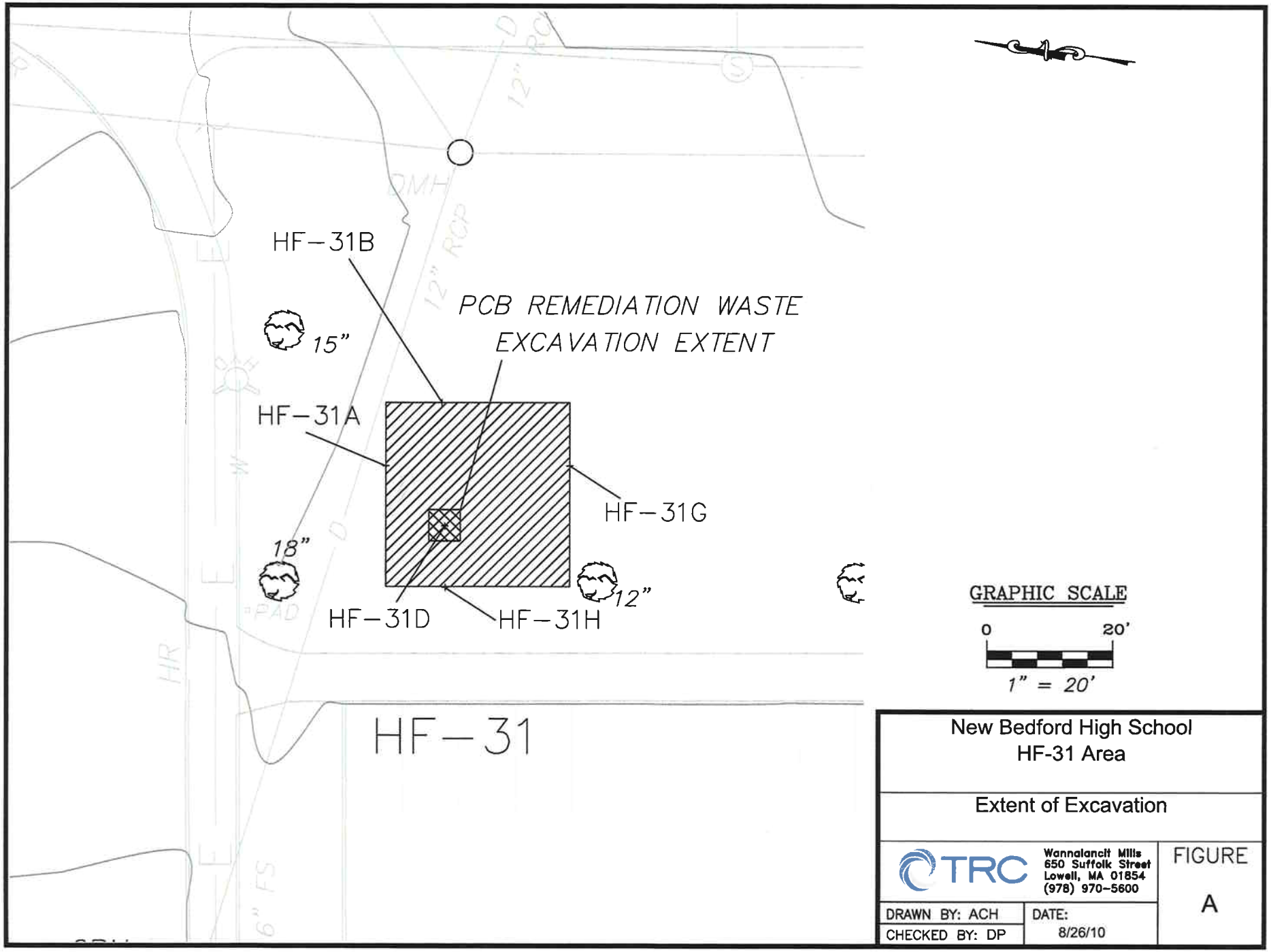
Sincerely,

Scott Alfonse
Director-Department of Environmental Stewardship

cc. Molly Cote, Massachusetts Department of Environmental Protection (by electronic PDF)
Cheryl Henlin, City of New Bedford (by electronic PDF)
David M. Sullivan, LSP, CHMM, TRC (by electronic PDF)

APPENDIX B

REMEDIATION FIGURE



New Bedford High School
HF-31 Area

Extent of Excavation

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

DRAWN BY: ACH
CHECKED BY: DP
DATE: 8/26/10

FIGURE
A

APPENDIX C

SOIL MANAGEMENT PLAN

SOIL MANAGEMENT PLAN

SOIL EXCAVATION AT SAMPLE LOCATION HF-31 NEW BEDFORD HIGH SCHOOL

Parker Street Waste Site
New Bedford, Massachusetts

Release Tracking Number 4-15685

Prepared for:

City of New Bedford
133 William Street
New Bedford, Massachusetts 02740

Prepared by:

TRC
Wannalancit Mills
650 Suffolk Street
Lowell, Massachusetts 01854

October 2010

TABLE OF CONTENTS

TABLES

1.0 INTRODUCTION

The City of New Bedford Massachusetts (City) intends to procure the services of a Contractor (the "Contractor") to perform remediation activities at the New Bedford High School campus (NBHS) portion of Parker Street Waste Site (PSWS) at sample location HF-31. For the purposes of this soil management plan, the Site is defined as the NBHS portion of the PSWS at sample location HF-31. The remediation activities will be conducted pursuant to the Massachusetts Contingency Plan (MCP; 310 CMR 40.0000) and will include, but may not be limited to the following:

- Excavation of polychlorinated biphenyl (PCB) Remediation Waste and direct loading into lined roll-off;
- Temporary off-site storage of lined roll-off;
- PCB Remediation Waste confirmatory sampling;
- Excavation of remaining non-PCB Remediation Waste;
- Off-Site disposal of excavated soils;
- Off-Site disposal of remediation generated wastes (i.e. decontamination solvents, rags, etc.), and
- Backfilling the excavated soil with appropriately documented contaminant-free fill material screened in advance for the presence of regulated contaminants.

Currently, soil EPCs under baseline conditions for total PCBs exceed applicable MCP Method1/Method 2 S-1 soil cleanup standards for current and/or future site conditions at sample location HF-31. Current and potential frequency of use by children and adults is "high" due to the active use of the athletic fields and other unpaved areas for the majority of the year. As a result, a Condition of No Significant Risk does not exist for impacted soils at the Site under current and future use scenarios.

During the delineation of PCB impacted soils at sample location HF-31, PCBs were detected at sample location HF-31D at a concentration of 71.6 milligrams per kilogram (mg/kg) in the 1-3 foot sampling interval. As PCBs were detected at a concentration greater than 50 mg/kg in soils, and meet the definition of PCB Remediation Waste (as defined in 40 CFR §761.3), the remediation activity at sample location HF-31D will be performed in compliance with 40CFR 761, and the MCP.

This SMP is intended to provide the Contractor with information regarding the requisite soil management requirements. These procedures are also designed to ensure that soil that is encountered at the Site is managed in a manner that is protective of human health, safety, public welfare and the environment, as required by the MCP. Due to the depth of most of the excavations and limited proximity to site groundwater it is anticipated that groundwater management needs for this work are not required. A Commonwealth of Massachusetts Licensed Site Professional (LSP) has been retained by the City to oversee the soil management activities during Site remediation to ensure compliance with the applicable provisions of the MCP and related Massachusetts Department of Environmental Protection (MassDEP) policies and guidance.

1.1 Contact Information

The owner (the "Owner") of the project is:

City of New Bedford
133 William Street
New Bedford, Massachusetts 02740
Contact: Mr. Scott Alfonse
(508) 979-1487

The Owner's LSP for this project is:

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

1.2 Roles and Responsibilities

The Owner will procure the services of a Contractor to complete the remediation activities outlined in the RAM Plan. Specifically, the Contractor will furnish all labor, equipment and materials required to complete the work in accordance with the contract documents including soil excavation, stockpiling, dust control, and off-Site transportation of soil from the Site. The Contractor will also be responsible for obtaining all necessary Federal, state and local permits required for this work (e.g., Dig-Safe and other necessary permits that may be required by the City).

The Contractor will not be responsible for obtaining approval from MassDEP Bureau of Waste Site Cleanup (BWSC), as required by the MCP at 310 CMR 40.0443, to implement this work. Such approval will be obtained by the LSP by submitting a Release Abatement Measure (RAM) to MassDEP describing the planned remediation activities.

Under a separate contract/authorization, the LSP and/or the LSP's designee (hereafter referred to collectively as "the LSP") will be responsible for obtaining regulatory approval under the MCP to implement the proposed remediation activities. The LSP will periodically inspect the construction activities to ensure consistency with the RAM, this SMP document and applicable MCP and MassDEP policies. Specifically, the LSP's role will include, but may not be limited to, inspection and oversight of the following activities:

- Soil excavation and grading
- Soil sampling
- Stockpiling

- Loading
- Off-Site transportation
- MCP and PCB Remediation Waste related decontamination activities

The LSP will also collect any samples required to characterize soil for off-Site disposal and for confirmatory sampling at sampling location HF-31, and will provide the required laboratory analyses of these samples.

The LSP will prepare and sign MCP Bills of Lading (BOLs) and/or Material Shipping Records (MSR) required for the off-Site shipment of excavated soil from the Site. The Contractor will be responsible for preparing any Hazardous Waste Manifests, if needed, for the off-Site transportation and disposal of any soil that meets the regulatory criteria for classification as a Hazardous Waste.

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

1.3 Existing Site Conditions

The Site is located within the larger PSWS disposal site that encompasses an area greater than 100 acres based on currently available information, in the vicinity of NBHS. The Site occupies approximately 0.02 acres (850 square feet) and is located on the NBHS campus portion of the Parker Street Waste Site (PSWS) at sample location HF-31, located on the west side of the NBHS campus. A Site location map is provided as Figure 1.

In Massachusetts, the excavation and management of impacted soil at disposal sites is regulated by the MCP. The purpose of the MCP is "to provide for the protection of health, safety, public welfare and the environment" by instituting a uniform mechanism for identifying impacted soils and implementing appropriate response actions.

1.3.1 Release Abatement Measure (310 CMR 40.0440)

Certain remediation related excavation activities at the Site will be performed as a RAM in accordance with the provisions of the MCP at 310 CMR 40.0440. A RAM Plan will be prepared by the LSP and will be submitted to MassDEP prior to initiating excavation activities. The RAM

Plan will specify the planned soil excavation activities, identify the threat of release conditions and describe response actions. The soil management procedures outlined in Section 2.0 of this document will form the basis of the RAM. Throughout the course of the remediation activities, the LSP may also prepare RAM Status Reports for submission to MassDEP as required by the MCP.

1.3.2 Management Procedures for Remediation Waste (310 CMR 40.0030)

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

1.3.3 Interim Waste Management Policy for Petroleum-Contaminated Soils (WSC-94-400)

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

1.3.4 Construction of Buildings in Contaminated Areas – January 2000 (WSC-00-425)

This policy clarifies existing regulatory requirements applicable to building construction areas that have been contaminated by a release of oil and/or hazardous material ("contaminated areas"). This clarification concerns, and is limited to, the jurisdiction and application of 310 CMR 40.0000 (MCP) to construction projects in contaminated areas.

1.3.5 Reuse and Disposal of Contaminated Soil at Massachusetts Landfills (COMM-97-001)

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

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

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

1.3.7 40 CFR Part 761

Certain EPA regulations address the management of PCB impacted soil. Approval from EPA for the activities described in the RAM Plan, insofar as EPA's jurisdiction extends, has been sought by the City.

Based on laboratory analytical results detailed in the RAM Plan, soils at sample location HF-31D constitute PCB Remediation Waste pursuant to EPA's PCB regulations under 40 CFR Part 761 and require management as such. Soils determined to be PCB Remediation Waste will be loaded and transported offsite for disposal in accordance with 40 CFR Part 761.61 following approval by the EPA.

As detailed in the RAM Plan, equipment that comes into direct contact with soil determined to be actual or potential PCB Remediation Waste will be decontaminated in accordance with methods described in the RAM Plan.

1.3.8 Hazardous Waste Manifest

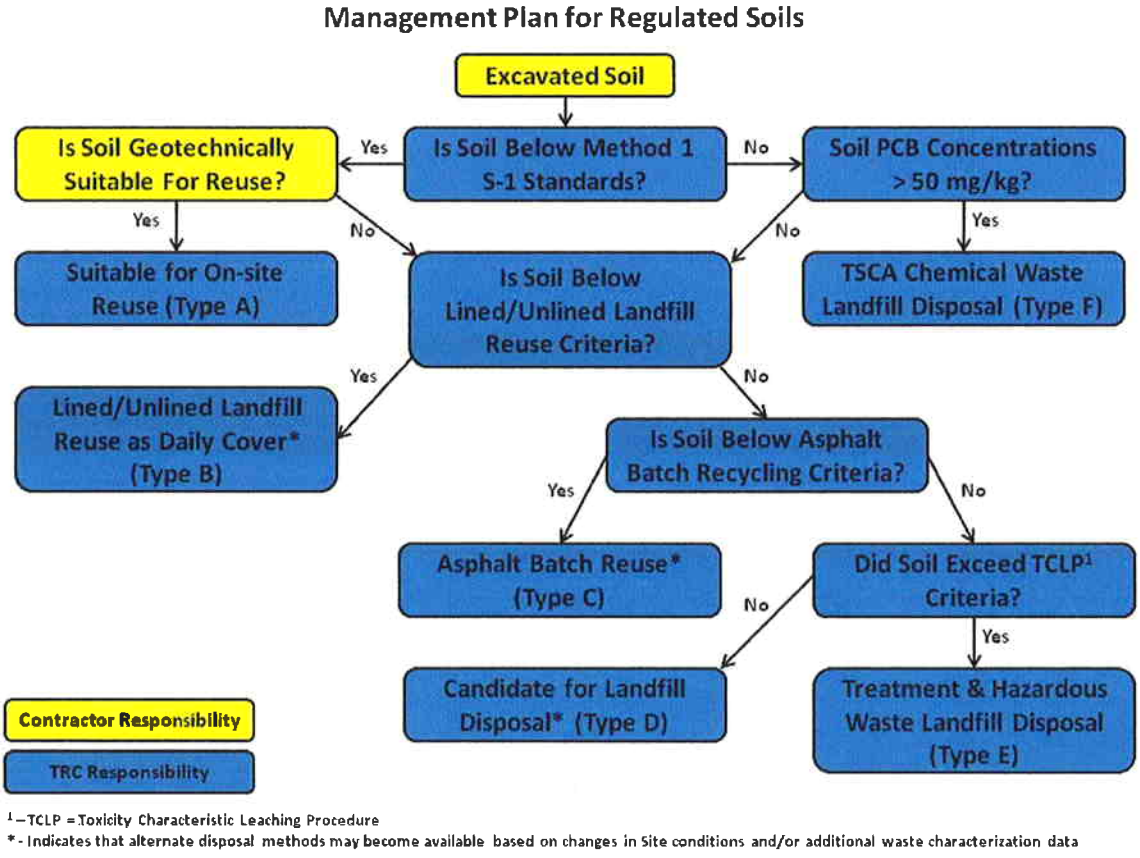
A Hazardous Waste Manifest is a MassDEP-approved form used to track the origin, quantity, composition, transportation and final destination of hazardous waste. Hazardous Waste Manifests should be utilized for shipping of any wastes subject to the Massachusetts Hazardous Waste Regulations (310 CMR 30.000). The Contractor will prepare any Hazardous Waste Manifest required for transport of the materials from this Site. The hazardous waste disposal facility to be used for disposal of any such material will be subject to approval by the Owner and/or LSP. Other requirements apply as described in 310 CMR 30.310. It is not anticipated that the generation of hazardous waste will be a part of this project.

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

2.0 EXCAVATION OVERSIGHT

TRC personnel will provide oversight during remediation activities. The soil oversight personnel will be screening soil with pre-characterization analytical data and providing as needed clarification regarding the soil category to the Contractor to ensure soil is segregated to the appropriate stockpile pending final reuse, recycling and/or disposal determinations.

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



Typical soil management options for a remediation project at a listed Disposal Site may allow soil to be returned to the approximate location from which it came (i.e., structure footing excavation) providing that it is chemically and geotechnically suitable for reuse as backfill, with the geotechnical suitability determined by the construction Contractor and/or project Architect/Engineer. Chemical suitability is determined by the LSP. Soil that is suitable for on-

site reuse may be returned directly to the excavation or stockpiled for later reuse in a nearby location. Soil that has been deemed unsuitable for reuse on-site will be segregated and stockpiled for off-site management (off-site reuse and/or disposal).

2.1 Soil Classification

A summary of soil data compared to Massachusetts Reuse, Recycling and Disposal Criteria, for soils to be excavated only, is included in Table 1. A summary of soils dioxin data for soils to be excavated compared to the Universal Treatment Standards (40 CFR §268.48) is included in Table 2.

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

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

Soil at a listed Disposal Site displaced by Construction Activities may be segregated into one or more of the following classifications:

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

The above outlined classification process is expected to produce the following five soil types:

Type A soils – Other excavated soils will not be reused on-site unless otherwise notified.

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

applicable off-site facility acceptance criteria, they will be segregated and transported offsite for re-use at a lined or unlined landfill facility.

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

Type D soils are unsuitable for on- or off-site reuse and off-site recycling. These soils do not indicate a failure of Toxicity Characteristic Leachate Procedure (TCLP) analysis. Therefore, these soils may be segregated and transported offsite for disposal at a non-hazardous waste landfill.

Type E soils have been pre-characterized as unsuitable for reuse on-site. These soils failed TCLP analysis and will need to be segregated for off-site disposal as hazardous waste.

Type F soils have been pre-characterized as PCB RemediationWaste. These soils will be disposed of at a TSCA chemical waste facility.

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

3.0 ON-SITE SOIL MANAGEMENT

3.1 PCB Remediation Waste Management

Soils excavated at sample location HF-31D will be directly loaded into a lined roll-off and transported to an off-site location for temporary storage prior to disposal at a chemical waste landfill conforming to the requirements of 40 CFR Part 761-75 following EPA approval. Roll-offs will be lined with polyethylene and covered to prevent leakage and storm water accumulation. If stock piling of soils is needed, the stockpiles on-site will be staged on polyethylene sheeting (minimum 6-mil thickness) and covered with sheeting at all times with exception of periods when adding or removing soil to or from the piles. The stockpiles should be designed such that storm water runoff does not impact the soil and any water draining from the soil does not migrate from the polyethylene sheeting to the ground surface. The stockpiles shall be inspected and estimates of total volumes made on a daily basis. Soil may be stockpiled at an alternative City owned location at the discretion of the City and as consistent with the MCP.

3.2 On-Site Stockpile Disposition

The stockpiles on-site will be staged on polyethylene sheeting (minimum 6-mil thickness) and covered with sheeting at all times with exception of periods when adding or removing soil to or from the piles. The stockpiles should be designed such that storm water runoff does not impact the soil and any water draining from the soil does not migrate from the polyethylene sheeting to the ground surface. The stockpiles shall be inspected and estimates of total volumes made on a daily basis. If roll-offs will be used, they will be lined with polyethylene and covered to prevent leakage and storm water accumulation. Soil may be stockpiled at an alternative City owned location at the discretion of the City and as consistent with the MCP.

3.3 Off-Site Reuse, Recycling and/or Disposal

Excavated soil that will be transported from the Site will be characterized as appropriate for off-site disposal at a suitable facility. Several suitable off-site facilities are being considered, but the facility locations have not been finalized. The laboratory results of pre-characterization sampling will be used for off-site disposal characterization to the extent possible. The existing Site data will be supplemented as necessary to satisfy facility-specific acceptance criteria. The sample laboratory data will be compared soil data against Massachusetts reuse, recycle, and disposal criteria in accordance to MassDEP Policy# COMM-97-001 and Interim Policy #WSC-94-400.

Transportation of all materials from the site will be performed using a MassDEP Bill of Lading (BOL), Material Shipping Record (MSR) or Hazardous Waste Manifest, as appropriate, and will be performed within 120 days of stockpiling in accordance with 310 CMR 40.0030 of the MCP.

3.4 Decontamination of Vehicles Transporting Soils

Soils and mud will be removed from vehicles prior to their departure from the Site. A decontamination pad will be constructed by the Contractor prior to soil removal activities. The

method of soil removal will likely be a combination of brushing the wheels to remove loose soils and/or passing vehicles through a decontamination station. Any liquids generated by vehicle decontamination will be drummed and transported off-site for disposal.

During the excavation of PCB Remediation Waste at sample location HF-31D, all sampling equipment will be decontaminated prior to use and between each discreet sample in accordance with the self-implementing decontamination procedures as set forth under 40 CFR Part 761.79(c)(2)(i) consisting principally of a solvent swab of tools, moveable equipment, and sampling implements that come into direct contact with potentially contaminated soil. Under the self-implementing decontamination approach, spent solvents and solvent-soaked rags from decontamination activities will be managed for disposal via incineration at an appropriately permitted facility per 40 CFR Part 761.79(g)(3), (4) or (5).

In addition, the Contractor shall be responsible for ensuring that tracking of potentially contaminated soil onto public roadways is prevented.

3.5 Supplementary Stockpile Characterization

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

TABLES

TABLE 1
Summary of Data for Soils to be Excavated in HF-31 Area New Bedford High School
New Bedford, Massachusetts

Analysis	Analyte						HF31-0.5-1+2.5-3	HF-31C			HF-31D	
						Sample ID:						
						Sample Depth (ft.):	0.5-3	0-1	1-3	1-3	0-1	1-3
						Sample Date:	12/30/2004	4/2/2009	4/2/2009	4/2/2009 Field Dup	4/2/2009	4/2/2009
		Reuse Levels*		Recycling Levels**								
		Lined Landfills	Unlined Landfills	Hot Mix Asphalt Plant	Cold Mix Emulsion Plant	Thermal Processing Plant						
SVOCs (mg/kg)	***TOTAL SVOCs***	100	100	N/A	N/A	N/A	NA	NA	NA	NA	NA	NA
PCBs (mg/kg)	***Total PCBs***	< 2	< 2	< 2	< 2	< 2	***2.553***	***2.88***	***5.32***	***7.31***	***0.597***	***71.6***
Metals (mg/kg)	Arsenic	40	40	30	30	30	NA	NA	NA	NA	NA	NA
	Cadmium	80	30	30	30	11	NA	**0.29**	**0.34**	NA	**0.62**	**1.24**
	Chromium	1,000	1,000	500	500	500	NA	NA	NA	NA	NA	NA
	Lead	2,000	1,000	1,000	1,000	1,000	NA	**31.5**	**82.9**	NA	**192**	**441**
	Mercury	10	10	10	10	3	NA	NA	NA	NA	NA	NA

Notes:
NA - Sample not analyzed for the listed analyte.
U - Compound was not detected at specified quantitation limit.
J - Estimated value; below quantitation limit.
B - Detected in associated laboratory method blank.
Values in **Bold** indicate the compound was detected.
Values shown in Bold and shaded type exceed one or more of the listed Disposable criteria.
SVOCs - Semivolatile Organic Compounds.
PCBs - Polychlorinated Biphenyls.
TSCA - Toxic Substances Control Act criteria.
* - MassDEP Contaminant Levels for Soil Reuse at Landfills, Policy # COMM-97-001,August 1997.
** - MassDEP Recycling Facility Summary Levels, InterimPolicy # WSC-94-400.

TABLE 2
Summary of Dioxins Data for HF-31 Area Soils to be Excavated Compared to Universal Treatment Standards
New Bedford High School
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:	HF-31D	
		Sample Depth (ft.):	0-1	1-3
		Sample Date:	4/15/2010	4/15/2010
		Universal Treatment Standard		
Dioxins				
(pg/g)	1234678-HpCDD	2,500	**31.6**	**48.9**
	OCDD	5,000	**586**	**699**
	1234678-HpCDF	2,500	**23.5**	**51.1**
	1234789-HpCDF	2,500	**0.793 J, EMPC**	**2.06 J**
	OCDF	5,000	**23.4**	**44.0**
	Total TCDD	1,000	**1.60 EMPC**	**6.17 EMPC**
	Total PeCDD	1,000	**5.42 EMPC**	**14.2 EMPC**
	Total HxCDD	1,000	**16.6 EMPC**	**31.0 EMPC**
	Total TCDF	1,000	**31.4 EMPC**	**78.7 EMPC**
	Total PeCDF	1,000	**44.3 EMPC**	**85.7 EMPC**
	Total HxCDF	1,000	**37.3 EMPC**	**78.2 EMPC**

Notes:

pg/g - picograms per gram (dry weight).

EMPC - Estimate Maximum Possible Concentration.

J - Estimated value.

U - Compound was not detected at specified quantitation limit.

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

Values shown in Bold and shaded type exceed Universal Treatment Standards.

Universal Treatment Standards per 40 CFR §268.48

APPENDIX D

RAM PLAN FEE DOCUMENTATION

TRC

21 Griffin Road North
Windsor, CT 06095

708169

WACHOVIA BANK, N.A.
Wilmington, DE
62-22/311

CHECK DATE
November 22, 2010

PAY Eight Hundred and 00/100 Dollars

AMOUNT
$800.00

TO
Commonwealth Of Massachusetts
P.O. Box 4062
Department of Environmental Protection
Boston MA 02211

By _____ MP
VOID AFTER 90 DAYS AUTHORIZED SIGNATURE

Security Check features included Details on back

⑈708169⑈ ⑆031100225⑆ 2079950091538⑈

EMILY BUSINESS FORMS 800.392.6018 VISION

TRC

21 Griffin Road North
Windsor, CT 06095

708169

Invoice Number	Date	Voucher	Amount	Discounts	Previous Pay	Net Amount
RAM PLAN SUBMITTAL	11/22/10	007753253931	800.00	0.00	0.00	800.00
Commonwealth Of Massachusetts 3BANK 4 030812		Totals	800.00	0.00	0.00	800.00

APPENDIX E

MUNICIPAL NOTIFICATION LETTERS

Wannalancit Mills
650 Suffolk Street
Lowell, MA 01854

978.970.5600 PHONE
978.453.1995 FAX

www.TRCsolutions.com

November 24, 2010

TRC Reference Number: 115058.0000.0000

Marianne B. De Souza
Health Department
1213 Purchase Street, First Floor
New Bedford, Massachusetts 02740

RE: Notice of Implementation of Release Abatement Measures Under the Massachusetts Contingency Plan – Soil Removal at Sample Location HF-31, New Bedford High School, MassDEP RTNs 4-15685.

Dear Ms. De Souza:

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 implementation of a Release Abatement Measure (RAM) at the New Bedford High School campus of the Parker Street Waste Site at sample location HF-31 located on the west side of the campus.

The RAM that will be performed at this location involves the excavation of soil, offsite disposal of the excavated soils, and backfilling with contaminant-free material. All work complies with Massachusetts Department of Environmental Protection and United States Environmental Protection Agency requirements.

If you have any questions concerning the RAM activities planned by the City, please do not hesitate to contact David Sullivan at TRC at (978) 656-3565 or Cheryl Henlin with the Department of Environmental Stewardship, at (508) 961-4576.

Sincerely,
TRC Environmental Corporation

David M. Sullivan, LSP, CHMM
Sr. Project Manager

Cc: Cheryl Henlin, New Bedford Department of Environmental Stewardship

Wannalancit Mills
650 Suffolk Street
Lowell, MA 01854

978.970.5600 PHONE
978.453.1995 FAX

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November 24, 2010

TRC Reference Number: 115058.0000.0000

Mayor Scott W. Lang
Office of the Mayor
City Hall, Room 311
New Bedford, Massachusetts 02740

RE: Notice of Implementation of Release Abatement Measures Under the Massachusetts Contingency Plan – Soil Removal at Sample Location HF-31, New Bedford High School, MassDEP RTNs 4-15685.

Dear Mr. Lang:

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 implementation of a Release Abatement Measure (RAM) at the New Bedford High School campus of the Parker Street Waste Site at sample location HF-31 located on the west side of the campus.

The RAM that will be performed at this location involves the excavation of soil, offsite disposal of the excavated soils, and backfilling with contaminant-free material. All work complies with Massachusetts Department of Environmental Protection and United States Environmental Protection Agency requirements.

If you have any questions concerning the RAM activities planned by the City, please do not hesitate to contact David Sullivan at TRC at (978) 656-3565 or Cheryl Henlin with the Department of Environmental Stewardship, at (508) 961-4576.

Sincerely,
TRC Environmental Corporation

David M. Sullivan, LSP, CHMM
Sr. Project Manager

Cc: Cheryl Henlin, New Bedford Department of Environmental Stewardship

APPENDIX F

EXCERPTS FROM 40 CFR PART 761

(1)(i) Has a waste management permit or other decision or enforcement document which exercises control over PCB wastes, issued by EPA or an authorized State Director for a State program that has been approved by EPA and is no less stringent in protection of health or the environment than the applicable TSCA requirements found in this part; or

(ii) Has a PCB waste management permit or other decision or enforcement document issued by a State Director pursuant to a State PCB waste management program no less stringent in protection of health or the environment than the applicable TSCA requirements found in this part; or

(iii) Is subject to a waste management permit or other decision or enforcement document which is applicable to the disposal of PCBs and which was issued through the promulgation of a regulation published in Title 40 of the Code of Federal Regulations.

(2) Complies with the terms and conditions of the permit or other decision or enforcement document described in paragraph (b)(1) of this section.

(3) Unless otherwise waived or modified in writing by the EPA Regional Administrator, complies with § 761.75(b); § 761.70(a)(1) through (a)(9), (b)(1) and (b)(2), and (c); or the PCB storage requirements at §§ 761.65(a), (c), and (d)(2), as appropriate.

(4) Complies with the reporting and recordkeeping requirements in subparts J and K of this part.

(c) A person conducting research and development (R&D) into PCB disposal methods (regardless of PCB concentration), or conducting PCB remediation activities may apply for a TSCA PCB Coordinated Approval. The EPA Regional Administrator may approve the request if the EPA Regional Administrator determines that the activity will not pose an unreasonable risk of injury to health or the environment and the person:

(1)(i) Has a permit or other decision and enforcement document issued or otherwise agreed to by EPA, or permit or other decision and enforcement document issued by an authorized State Director for a State program that has been approved by EPA, which exercises control over the management of PCB wastes, and that person is in compliance with all terms and conditions of that document; or

(ii) Has a permit, which exercises control over the management of PCB wastes, issued by a State Director pursuant to a State PCB disposal program no less stringent than the requirements in this part.

(2) Complies with the terms and conditions of that permit or other decision and enforcement document.

(3) Complies with the reporting and recordkeeping requirements in subparts J and K of this part.

[63 FR 35456, June 29, 1998]

§ 761.79 Decontamination standards and procedures.

(a) *Applicability.* This section establishes decontamination standards and procedures for removing PCBs, which are regulated for disposal, from water, organic liquids, non-porous surfaces (including scrap metal from disassembled electrical equipment), concrete, and non-porous surfaces covered with a porous surface, such as paint or coating on metal.

(1) Decontamination in accordance with this section does not require a disposal approval under subpart D of this part.

(2) Materials from which PCBs have been removed by decontamination in accordance with this section may be distributed in commerce in accordance with § 761.20(c)(5).

(3) Materials from which PCBs have been removed by decontamination in accordance with this section may be used or reused in accordance with § 761.30(u).

(4) Materials from which PCBs have been removed by decontamination in accordance with this section, not including decontamination waste and residuals under paragraph (g) of this section, are unregulated for disposal under subpart D of this part.

(5) Any person decontaminating porous surfaces other than concrete under paragraph (b)(4) of this section and non-porous surfaces covered with a porous surface, such as paint or coating on metal, under paragraph (b)(3) or (c)(6) of this section must obtain an alternative decontamination approval in

accordance with paragraph (h) of this section.

(6) Any person engaging in decontamination under this section is responsible for determining and complying with all other applicable Federal, State, and local laws and regulations.

(b) *Decontamination standards.* Chopping (including wire chopping), distilling, filtering, oil/water separation, spraying, soaking, wiping, stripping of insulation, scraping, scarification or the use of abrasives or solvents may be used to remove or separate PCBs, to the following standards, from liquids, concrete, or non-porous surfaces.

(1) The decontamination standard for water containing PCBs is:

(i) Less than 200 µg/L (i.e., <200 ppb PCBs) for non-contact use in a closed system where there are no releases;

(ii) For water discharged to a treatment works (as defined in §503.9(aa) of this chapter) or to navigable waters, <3 µg/L (approximately <3 ppb) or a PCB discharge limit included in a permit issued under section 307(b) or 402 of the Clean Water Act; or

(iii) Less than or equal to 0.5 µg/L (i.e., approximately ≤0.5 ppb PCBs) for unrestricted use.

(2) The decontamination standard for organic liquids and non-aqueous inorganic liquids containing PCBs is <2 milligrams per kilogram (i.e., <2 ppm PCBs).

(3) The decontamination standard for non-porous surfaces in contact with liquid and non-liquid PCBs is:

(i) For unrestricted use:

(A) For non-porous surfaces previously in contact with liquid PCBs at any concentration, where no free-flowing liquids are currently present, ≤10 micrograms PCBs per 100 square centimeters (≤10 µg/100 cm^2) as measured by a standard wipe test (§761.123) at locations selected in accordance with subpart P of this part.

(B) For non-porous surfaces in contact with non-liquid PCBs (including non-porous surfaces covered with a porous surface, such as paint or coating on metal), cleaning to Visual Standard No. 2, Near-White Blast Cleaned Surface Finish, of the National Association of Corrosion Engineers (NACE). A person shall verify compliance with standard No. 2 by visually inspecting all cleaned areas.

(ii) For disposal in a smelter operating in accordance with §761.72(b):

(A) For non-porous surfaces previously in contact with liquid PCBs at any concentration, where no free-flowing liquids are currently present, <100 µg/100 cm^2 as measured by a standard wipe test (§761.123) at locations selected in accordance with subpart P of this part.

(B) For non-porous surfaces in contact with non-liquid PCBs (including non-porous surfaces covered with a porous surface, such as paint or coating on metal), cleaning to Visual Standard No. 3, Commercial Blast Cleaned Surface Finish, of the National Association of Corrosion Engineers (NACE). A person shall verify compliance with standard No. 3 by visually inspecting all cleaned areas.

(4) The decontamination standard for concrete is ≤10 µg/100 cm^2 as measured by a standard wipe test (§761.123) if the decontamination procedure is commenced within 72 hours of the initial spill of PCBs to the concrete or portion thereof being decontaminated.

(c) *Self-implementing decontamination procedures.* The following self-implementing decontamination procedures are available as an alternative to the measurement-based decontamination methods specified in paragraph (b) of this section. Any person performing self-implementing decontamination must comply with one of the following procedures.

(1) Any person decontaminating a PCB Container must do so by flushing the internal surfaces of the container three times with a solvent containing <50 ppm PCBs. Each rinse shall use a volume of the flushing solvent equal to approximately 10 percent of the PCB Container capacity.

(2) Any person decontaminating movable equipment contaminated by PCBs, tools, and sampling equipment may do so by:

(i) Swabbing surfaces that have contacted PCBs with a solvent;

(ii) A double wash/rinse as defined in subpart S of this part; or

(iii) Another applicable decontamination procedure in this section.

(3) Any person decontaminating a non-porous surface in contact with free-flowing mineral oil dielectric fluid (MODEF) at levels ≤10,000 ppm PCBs must do so as follows:

(i) Drain the free-flowing MODEF and allow the residual surfaces to drain for an additional 15 hours.

(ii) Dispose of drained MODEF according to paragraph (g) of this section.

(iii) Soak the surfaces to be decontaminated in a sufficient amount of clean (containing <2 ppm PCBs) performance-based organic decontamination fluid (PODF) such that there is a minimum of 800 ml of PODF for each 100 cm^2 of contaminated or potentially contaminated surface for at least 15 hours at ≥20 °C.

(iv) Approved PODFs include:

(A) Kerosene.

(B) Diesel fuel.

(C) Terpene hydrocarbons.

(D) Mixtures of terpene hydrocarbons and terpene alcohols.

(v) Drain the PODF from the surfaces.

(vi) Dispose of the drained PODF in accordance with paragraph (g) of this section.

(4) Any person decontaminating a non-porous surface in contact with free-flowing MODEF containing >10,000 ppm PCB in MODEF or askarel PCB (up to 70 percent PCB in a mixture of trichlorobenzenes and tetrachlorobenzenes) must do so as follows:

(i) Drain the free-flowing MODEF or askarel and allow the residual surfaces to drain for an additional 15 hours.

(ii) Dispose of drained MODEF or askarel according to paragraph (g) of this section.

(iii) Soak the surfaces to be decontaminated in a sufficient amount of clean PODF (containing <2 ppm PCBs) such that there is a minimum of 800 ml of PODF for each 100 cm^2 of contaminated or potentially contaminated surface for at least 15 hours at ≥20 °C.

(iv) Approved PODFs include:

(A) Kerosene.

(B) Diesel fuel.

(C) Terpene hydrocarbons.

(D) Mixtures of terpene hydrocarbons and terpene alcohols.

(v) Drain the PODF from the surfaces.

(vi) Dispose of the drained PODF in accordance with paragraph (g) of this section.

(vii) Resoak the surfaces to be decontaminated, pursuant to paragraph (c)(3)(iii) of this section, in a sufficient amount of clean PODF (containing <2 ppm PCBs) such that there is a minimum of 800 ml of PODF for each 100 cm^2 of surface for at least 15 hours at ≥20 °C.

(viii) Drain the PODF from the surfaces.

(ix) Dispose of the drained PODF in accordance with paragraph (g) of this section.

(5) Any person decontaminating piping and air lines in an air compressor system must do so as follows:

(i) Before decontamination proceeds, disconnect or bypass the air compressors and air dryers from the piping and air lines and decontaminate the air compressors and air dryers separately in accordance with paragraphs (b), (c)(1) through (c)(4), or (c)(6) of this section. Dispose of filter media and desiccant in the air dyers based on their existing PCB concentration.

(ii) Test the connecting line and appurtenances of the system to assure that there is no leakage. Test by introducing air into the closed system at from 90 to 100 pounds per square inch (psi). Only if there is a pressure drop of <5 psi in 30 minutes may decontamination take place.

(iii) When there is no leakage, fill the piping and air lines with clean (containing <2 ppm PCBs) solvent. Solvents include PODF, aqueous potassium hydroxide at a pH between 9 and 12, or water containing 5 percent sodium hydroxide by weight.

(iv) Circulate the solvent to achieve turbulent flow through the piping and air lines in the air compressor system until the total volume of solvent circulated equals 10 times the total volume of the particular article being decontaminated, then drain the solvent. Calculate the total volume of solvent circulated by multiplying the pump rate by the time of pumping. Turbulent flow means a Reynolds number range from 20,000 to 43,000. Refill the system

surfaces may be thermally decontaminated in accordance with §761.79(c)(6)(i).

(2) Having surface concentrations ≥100 µg/100 cm² shall be disposed of in accordance with paragraph (a)(5)(i)(B)(2)(iii) of this section. Metal surfaces may be thermally decontaminated in accordance with §761.79(c)(6)(ii).

(C) For use, non-porous surfaces shall be decontaminated on-site or off-site to the standards specified in §761.79(b)(3) or in accordance with §761.79(c).

(iii) *Porous surfaces.* Porous surfaces shall be disposed on-site or off-site as bulk PCB remediation waste according to paragraph (a)(5)(i) of this section or decontaminated for use according to §761.79(b)(4), as applicable.

(iv) *Liquids.* Any person disposing of liquid PCB remediation waste shall either:

(A) Decontaminate the waste to the levels specified in §761.79(b)(1) or (b)(2).

(B) Dispose of the waste in accordance with paragraph (b) of this section or an approval issued under paragraph (c) of this section.

(v) *Cleanup wastes.* Any person generating the following wastes during and from the cleanup of PCB remediation waste shall dispose of or reuse them using one of the following methods:

(A) Non-liquid cleaning materials and personal protective equipment waste at any concentration, including non-porous surfaces and other non-liquid materials such as rags, gloves, booties, other disposable personal protective equipment, and similar materials resulting from cleanup activities shall be either decontaminated in accordance with §761.79(b) or (c), or disposed of in one of the following facilities, without regard to the requirements of subparts J and K of this part:

(*1*) A facility permitted, licensed, or registered by a State to manage municipal solid waste subject to part 258 of this chapter.

(*2*) A facility permitted, licensed, or registered by a State to manage non-municipal non-hazardous waste subject to §§257.5 through 257.30 of this chapter, as applicable.

(*3*) A hazardous waste landfill permitted by EPA under section 3004 of RCRA, or by a State authorized under section 3006 of RCRA.

(*4*) A PCB disposal facility approved under this part.

(B) Cleaning solvents, abrasives, and equipment may be reused after decontamination in accordance with §761.79.

(6) *Cleanup verification*—(i) *Sampling and analysis.* Any person collecting and analyzing samples to verify the cleanup and on-site disposal of bulk PCB remediation wastes and porous surfaces must do so in accordance with subpart O of this part. Any person collecting and analyzing samples from non-porous surfaces must do so in accordance with subpart P of this part. Any person collecting and analyzing samples from liquids must do so in accordance with §761.269. Any person conducting interim sampling during PCB remediation waste cleanup to determine when to sample to verify that cleanup is complete, may use PCB field screening tests.

(ii) *Verification.* (A) Where sample analysis results in a measurement of PCBs less than or equal to the levels specified in paragraph (a)(4) of this section, self-implementing cleanup is complete.

(B) Where sample analysis results in a measurement of PCBs greater than the levels specified in paragraph (a)(4) of this section, self-implementing cleanup of the sampled PCB remediation waste is not complete. The owner or operator of the site must either dispose of the sampled PCB remediation waste, or reclean the waste represented by the sample and reinitiate sampling and analysis in accordance with paragraph (a)(6)(i) of this section.

(7) *Cap requirements.* A cap means, when referring to on-site cleanup and disposal of PCB remediation waste, a uniform placement of concrete, asphalt, or similar material of minimum thickness spread over the area where remediation waste was removed or left in place in order to prevent or minimize human exposure, infiltration of water, and erosion. Any person designing and constructing a cap must do so in accordance with §264.310(a) of this chapter, and ensure that it complies with the permeability, sieve, liquid limit, and plasticity index parameters in §761.75(b)(1)(ii) through (b)(1)(v). A

with clean solvent and repeat the circulation and drain process.

(6) Any person using thermal processes to decontaminate metal surfaces in contact with PCBs, as required by § 761.62(a)(6), must use one of the following options:

(i) Surfaces in contact with liquid and non-liquid PCBs at concentrations <500 ppm may be decontaminated in a scrap metal recovery oven or smelter for purposes of disposal in accordance with § 761.72.

(ii) Surfaces in contact with liquid or non-liquid PCBs at concentrations ≥500 ppm may be smelted in a smelter operating in accordance with § 761.72(b), but must first be decontaminated in accordance with § 761.72(a) or to a surface concentration of <100 μg/100 cm^2.

(d) *Decontamination solvents.* (1) Unless otherwise provided in paragraphs (c)(3) through (c)(5) of this section, the solubility of PCBs in any solvent used for purposes of decontamination under this section must be 5 percent or more by weight.

(2) The solvent may be reused for decontamination so long as its PCB concentration is <50 ppm.

(3) Solvent shall be disposed of under paragraph (g) of this section.

(4) Other than as allowed in paragraphs (c)(3) and (c)(4) of this section, solvents may be tested and validated for performance-based decontamination of non-porous surfaces contaminated with MODEF or other PCB liquids, in accordance with the self-implementing procedures found in subpart T of this part. Specific conditions for the performance-based testing from this validation are determined in the validation study.

(e) *Limitation of exposure and control of releases.* (1) Any person conducting decontamination activities under this section shall take necessary measures to protect against direct release of PCBs to the environment from the decontamination area.

(2) Persons participating in decontamination activities shall wear or use protective clothing or equipment to protect against dermal contact or inhalation of PCBs or materials containing PCBs.

(f) *Sampling and recordkeeping.* (1) Confirmatory sampling is required under paragraph (b) of this section. For liquids described in paragraphs (b)(1) and (b)(2) of this section, sample in accordance with §§ 761.269 and 761.272. For non-porous surfaces and concrete described in paragraphs (b)(3) and (b)(4) of this section, sample in accordance with subpart P of this part. A written record of such sampling must be established and maintained for 3 years from the date of any decontamination under this section. The record must show sampling locations and analytical results and must be retained at the site of the decontamination or a copy of the record must be made available to EPA in a timely manner, if requested. In addition, recordkeeping is required in accordance with § 761.180(a) for all wastes generated by a decontamination process and regulated for disposal under this subpart.

(2) Confirmatory sampling is not required for self-implementing decontamination procedures under paragraph (c) of this section. Any person using these procedures must retain a written record documenting compliance with the procedures for 3 years after completion of the decontamination procedures (e.g., video recordings, photographs).

(g) *Decontamination waste and residues.* Decontamination waste and residues shall be disposed of at their existing PCB concentration unless otherwise specified.

(1) Distillation bottoms or residues and filter media are regulated for disposal as PCB remediation waste.

(2) PCBs physically separated from regulated waste during decontamination (such as by chopping, shredding, scraping, abrading or oil/water separation, as opposed to solvent rinsing and soaking), other than wastes described in paragraph (g)(1) of this section, are regulated for disposal at their original concentration.

(3) Hydrocarbon solvent used or reused for decontamination under this section that contains <50 ppm PCB must be burned and marketed in accordance with the requirements for used oil in § 761.20(e), disposed of in accordance with § 761.60(a) or (e), or decontaminated pursuant to this section.

(4) Chlorinated solvent at any PCB concentration used for decontamination under this section shall be disposed of in an incinerator operating in compliance with § 761.70, or decontaminated pursuant to this section.

(5) Solvents ≥50 ppm other than those described in paragraphs (g)(3) and (g)(4) of this section shall be disposed of in accordance with § 761.60(a) or decontaminated pursuant to this section.

(6) Non-liquid cleaning materials and personal protective equipment waste at any concentration, including non-porous surfaces and other non-liquid materials such as rags, gloves, booties, other disposable personal protective equipment, and similar materials resulting from decontamination shall be disposed of in accordance with § 761.61(a)(5)(v).

(h) *Alternative decontamination or sampling approval.* (1) Any person wishing to decontaminate material described in paragraph (a) of this section in a manner other than prescribed in paragraph (b) of this section must apply in writing to the EPA Regional Administrator in the Region where the activity would take place, for decontamination activity occurring in a single EPA Region; or the Director of the National Program Chemicals Division, for decontamination activity occurring in more than one EPA Region. Each application must describe the material to be decontaminated and the proposed decontamination method, and must demonstrate that the proposed method is capable of decontaminating the material to the applicable level set out in paragraphs (b)(1) through (b)(4) of this section.

(2) Any person wishing to decontaminate material described in paragraph (a) of this section using a self-implementing procedure other than prescribed in paragraph (c) of this section must apply in writing to the EPA Regional Administrator in the Region where the activity would take place, for decontamination activity occurring in a single EPA Region; or the Director of the National Program Chemicals Division, for decontamination activity occurring in more than one EPA Region. Each application must describe the material to be decontaminated and the proposed self-implementing decontamination method and must include a proposed validation study to confirm performance of the method.

(3) Any person wishing to sample decontaminated material in a manner other than prescribed in paragraph (f) of this section must apply in writing to the EPA Regional Administrator in the Region where the activity would take place, for decontamination activity occurring in a single EPA Region; or the Director of the National Program Chemicals Division, for decontamination activity occurring in more than one EPA Region. Each application must contain a description of the material to be decontaminated, the nature and PCB concentration of the contaminating material (if known), the decontamination method, the proposed sampling procedure, and a justification for how the proposed sampling is equivalent to or more comprehensive than the sampling procedure required under paragraph (f) of this section.

(4) EPA may request additional information that it believes necessary to evaluate the application.

(5) EPA will issue a written decision on each application for risk-based decontamination or sampling. No person may conduct decontamination or sampling under this paragraph prior to obtaining written approval from EPA. EPA will approve an application if it finds that the proposed decontamination or sampling method will not pose an unreasonable risk of injury to health or the environment.

[63 FR 35457, June 29, 1998, as amended at 64 FR 33761, June 24, 1999]

Subpart E—Exemptions

§ 761.80 Manufacturing, processing and distribution in commerce exemptions.

(a) The Administrator grants the following petitioner(s) an exemption for 1 year to process and distribute in commerce PCBs for use as a mounting medium in microscopy:

(1) McCrone Accessories Components, Division of Walter C. McCrone Associates, Inc., 2820 South Michigan Avenue, Chicago, IL. 60616.

(2) [Reserved]

(b) The Administrator grants the following petitioner(s) an exemption for 1

compositing area. The maximum number of grid points in a composite sample taken from a subsequent compositing area is eight. These eight grid points must be adjacent to one another in the subsequent compositing area, but need not be collinear.

(2) *Compositing from samples taken at grid points or pairs of coordinates in accordance with § 761.283(c).* Samples collected at small sites are based on selecting pairs of coordinates or using the sample site selection procedure for grid sampling with a smaller grid interval.

(i) *Samples collected from a grid having a smaller grid interval.* Use the procedure in paragraph (b)(1)(i) of this section to composite samples and determine the area of inference for composite samples.

(ii) *Samples collected from pairs of coordinates.* All three samples must be composited. The area of inference for the composite is the entire area sampled.

§ 761.292 Chemical extraction and analysis of individual samples and composite samples.

Use either Method 3500B/3540C or Method 3500B/3550B from EPA's SW-846, Test Methods for Evaluating Solid Waste, or a method validated under subpart Q of this part, for chemical extraction of PCBs from individual and composite samples of PCB remediation waste. Use Method 8082 from SW-846, or a method validated under subpart Q of this part, to analyze these extracts for PCBs.

§ 761.295 Reporting and recordkeeping of the PCB concentrations in samples.

(a) Report all sample concentrations for bulk PCB remediation waste and porous surfaces on a dry weight basis and as micrograms of PCBs per gram of sample (ppm by weight).

(b) Record and keep on file for 3 years the PCB concentration for each sample or composite sample.

§ 761.298 Decisions based on PCB concentration measurements resulting from sampling.

(a) For grid samples which are chemically analyzed individually, the PCB concentration applies to the area of inference as described in § 761.283(d).

(b) For grid samples analyzed as part of a composite sample, the PCB concentration applies to the area of inference of the composite sample as described in § 761.283(d) (i.e., the area of inference is the total of the areas of the individual samples included in the composite).

(c) For coordinate pair samples analyzed as part of a composite sample, in accordance with §§ 761.283(c)(2) and 761.289(b)(2)(ii), the PCB concentration applies to the entire cleanup site.

Subpart P—Sampling Non-Porous Surfaces for Measurement-Based Use, Reuse, and On-Site or Off-Site Disposal Under § 761.61(a)(6) and Decontamination Under § 761.79(b)(3)

SOURCE: 63 FR 35467, June 29, 1998, unless otherwise noted.

§ 761.300 Applicability.

This subpart provides sample site selection procedures for large, nearly flat non-porous surfaces, and for small or irregularly shaped non-porous surfaces. This subpart also provides procedures for analyzing the samples and interpreting the results of the sampling. Any person verifying completion of self-implementing cleanup and on-site disposal of non-porous surfaces under § 761.61(a)(6), or verifying that decontamination standards under § 761.79(b)(3) are met, must use these procedures.

§ 761.302 Proportion of the total surface area to sample.

(a) *Large nearly flat surfaces.* Divide the entire surface into approximately 1 meter square portions and mark the portions so that they are clearly identified. Determine the sample location in each portion as directed in § 761.304.

(1) For large nearly flat surfaces contaminated by a single source of PCBs with a uniform concentration, assign each 1 meter square surface a unique sequential number.

(i) For three or fewer 1 meter square areas, sample all of the areas.

(ii) For four or more 1 meter square areas, use a random number generator or table to select a minimum of 10 percent of the areas from the list, or to select three areas, whichever is more.

(2) For other large nearly flat surfaces, sample all of the one meter square areas.

(b) *Small or irregularly shaped surfaces.* For small surfaces having irregular contours, such as hand tools, natural gas pipeline valves, and most exterior surfaces of machine tools, sample the entire surface. Any person may select sampling locations for small, nearly flat surfaces in accordance with §761.308 with the exception that the maximum area in §761.308(a) is <i meter square.

(c) *Preparation of surfaces.* Drain all free-flowing liquids from surfaces and brush off dust or loose grit.

§761.304 Determining sample location.

(a) For 1 square meter non-porous surface areas having the same size and shape, it is permissible to sample the same 10 cm by 10 cm location or position in each identical 1 square meter area. This location or position is determined in accordance with §761.306 or §761.308.

(b) If some 1 square meter surfaces for a larger non-porous surface area have different sizes and shapes, separately select the 10 cm by 10 cm sampling position for each different 1 square meter surface in accordance with §761.308.

(c) If non-porous surfaces have been cleaned and the cleaned surfaces do not meet the applicable standards or levels, surfaces may be recleaned and resampled. When resampling surfaces previously sampled to verify cleanup levels, use the sampling procedures in §§761.306 through 761.316 to resample the surfaces. If any sample site selected coincides with a previous sampling site, restart the sample selection process until all resampling sites are different from any previous sampling sites.

§761.306 Sampling 1 meter square surfaces by random selection of halves.

(a) Divide each 1 meter square portion where it is necessary to collect a surface wipe test sample into two equal (or as nearly equal as possible) halves. For example, divide the area into top and bottom halves or left and right halves. Choose the top/bottom or left/right division that produces halves having as close to the shape of a circle as possible. For example, a square is closer to the shape of a circle than is a rectangle and a rectangle having a length to width ratio of 2:1 is closer to the shape of a circle than a rectangle having a length to width ratio of 3:1.

(b) Assign a unique identifier to each half and then select one of the halves for further sampling with a random number generator or other device (i.e., by flipping a coin).

(c) Continue selecting progressively smaller halves by dividing the previously selected half, in accordance with paragraphs (a) and (b) of this section, until the final selected half is larger than or equal to 100 cm^2 and smaller than 200 cm^2.

(d) Perform a standard PCB wipe test on the final selected halves from each 1 meter square portion.

(e) The following is an example of applying sampling by halves. Assume that the area to sample is a 1 meter square surface area (a square that has sides 1 meter long). Assign each half to one face of a coin. After flipping the coin, the half assigned to the face of the coin that is showing is the half selected.

(1) Selecting the first half:

(i) For a square shape the top/bottom halves have the same shape as the left/right halves when compared to a circle, i.e., regardless of which way the surface is divided, each half is 1 half meter wide by 1 meter long. Therefore, divide the area either top/bottom or left/right. For selecting the first half, this example will select from left/right halves.

(ii) A coin flip selects the left half. The dimensions of this selected surface area are 1 meter high and ½ meter wide.

(2) Selecting the second half:

(i) If the next selection of halves was left/right, the halves would be rectangles four times as long as they are wide (¼ meter wide and 1 meter high). Halves selected from top/bottom would be square (½ meter on a side). Therefore, select the next halves top/bottom, because the shape of the top/bottom

halves (square) is closer to the shape of a circle than the shape of the left/right halves (long narrow rectangles).

(ii) A coin flip selects the top half. The dimensions of this selected surface area are ½ meter high and ½ meter wide.

(3) Selecting the third half:

(i) Just as for the selection of the first half, which divided the original square area, both the left/right and the top/bottom halves have the same shape when compared to a circle (both are rectangles having the same dimensions). Therefore, choose either left/right or top/bottom halves. This example will select from left/right halves.

(ii) A coin flip selects the right half. The dimensions of this selected surface are ¼ meter by ½ meter.

(4) Selecting the fourth half:

(i) If the next selection of halves was left/right, the halves would be rectangles four times as long as they are wide (⅛ meter wide and ½ meter high. Halves selected from top/bottom would be square (¼ meter on a side). Therefore, select the next halves top/bottom, because the shape of the top/bottom halves (square) are closer to the shape of a circle than the shape of the left/right halves (long narrow rectangles).

(ii) A coin flip selects the bottom half. The dimensions of this selected surface area are ¼ meter high and ¼ meter wide.

(5) Selecting the fifth half:

(i) Just as for the selection of the first and third halves, both the left/right and the top/bottom halves have the same shape when compared to a circle (both are rectangles having the same dimensions). Therefore, choose either left/right or top/bottom halves. This example will select from left/right halves.

(ii) A coin flip selects the right half. The dimensions of the selected surface are ⅛ meter by ¼ meter.

(6) Selecting the sixth half:

(i) If the next selection of halves was left/right, the halves would be rectangles four times as long as they are wide (⅛s meter wide and ¼ meter high. Halves selected from top/bottom would be square (⅛ meter on a side). Therefore, select the next halves top/bottom, because the shape of the top/bottom halves (square) are closer to the shape of a circle than the shape of the left/right halves (long narrow rectangles).

(ii) A coin flip selects the top half. The dimensions of this selected surface are ⅛ meter high and ⅛ meter wide or 12.5 cm by 12.5 cm.

(7) Collect a standard wipe test sample in the sixth half. Since the dimensions of half of the sixth half would be 12.5 cm by 6.25 cm, the area (approximately 78 cm^2) would be less than the required 100 cm^2 minimum area for the standard wipe test. Therefore, no further sampling by halves is necessary. Take the standard wipe test samples of the entire selected sixth half.

§ 761.308 Sample selection by random number generation on any two-dimensional square grid.

(a) Divide the surface area of the non-porous surface into rectangular or square areas having a maximum area of 1 square meter and a minimum dimension of 10 centimeters.

(b) Measure the length and width, in centimeters, of each area created in paragraph (a) of this section. Round off the number of centimeters in the length and the width measurements to the nearest centimeter.

(c) For each 1 square meter area created in accordance with paragraph (a) of this section, select two random numbers: one each for the length and width borders measured in paragraph (b) of this section. An eligible random number can be from zero up to the total width, minus 10 centimeters.

(d) Locate the 10 centimeter by 10 centimeter sample.

(1) Orient the 1 square meter surface area so that, when you are facing the area, the length is left to right and the width is top to bottom. The origin, or reference point for measuring selected random numbers of centimeters to the sampling area, is on the lower left corner when facing the surface.

(2) Mark the random number selected for the length distance, in centimeters, from the origin to the right (at the bottom of the area away from the origin).

(3) From the marked length distance on the bottom of the area, move perpendicularly up from the bottom of the area into the area for the distance randomly selected for the width.

(4) Use the point determined in paragraph (d)(3) of this section as the lower left corner of the 10 centimeter by 10 centimeter sample.

§ 761.310 Collecting the sample.

Use the standard wipe test as defined in § 761.123 to sample one 10 centimeter by 10 centimeter square (100 cm^2) area to represent surface area PCB concentrations of each square meter or fraction of a square meter of a nearly flat, non-porous surface. For small surfaces, use the same procedure as for the standard wipe test, only sample the entire area, rather than 10 centimeter by 10 centimeter squares.

§ 761.312 Compositing of samples.

For a surface originally contaminated by a single source of PCBs with a uniform concentration, it is permissible to composite surface wipe test samples and to use the composite measurement to represent the PCB concentration of the entire surface. Composite samples consist of more than one sample gauze extracted and chemically analyzed together resulting in a single measurement. The composite measurement represents an arithmetic mean of the composited samples.

(a) *Compositing samples from surfaces to be used or reused.* For small or irregularly shaped surfaces or large nearly flat surfaces, if the surfaces are contaminated by a single source of PCBs with a uniform concentration, composite a maximum of three adjacent samples.

(b) *Compositing samples from surfaces to be disposed of off-site or on-site.* (1) For small or irregularly shaped surfaces, composite a maximum of three adjacent samples.

(2) For large nearly flat surfaces, composite a maximum of 10 adjacent samples.

§ 761.314 Chemical analysis of standard wipe test samples.

Perform the chemical analysis of standard wipe test samples in accordance with § 761.272. Report sample results in micrograms per 100 cm^2.

§ 761.316 Interpreting PCB concentration measurements resulting from this sampling scheme.

(a) For an individual sample taken from an approximately 1 meter square portion of the entire surface area and not composited with other samples, the status of the portion is based on the surface concentration measured in that sample. If the sample surface concentration is not equal to or lower than the cleanup level, by inference the entire 1 meter area, and not just the immediate area where the sample was taken, is not equal to or lower than the cleanup level.

(b) For areas represented by the measurement results from compositing more than one 10 centimeter by 10 centimeter sample, the measurement for the composite is the measurement for the entire area. For example, when there is a composite of 10 standard wipe test samples representing 9.5 square meters of surface area and the result of the analysis of the composite is 20 µg/100 cm^2, then the entire 9.5 square meters has a PCB surface concentration of 20 µg/100 cm^2, not just the area in the 10 cm by 10 cm sampled areas.

(c) For small surfaces having irregular contours, where the entire surface was sampled, measure the surface area. Divide 100 cm^2 by the surface area and multiply this quotient by the total number of micrograms of PCBs on the surface to obtain the equivalent measurement of micrograms per 100 cm^2.

Subpart Q—Self-Implementing Alternative Extraction and Chemical Analysis Procedures for Non-liquid PCB Remediation Waste Samples

SOURCE: 63 FR 35468, June 29, 1998, unless otherwise noted.

§ 761.320 Applicability.

This subpart describes self-implementing comparison testing requirements for chemical extraction and chemical analysis methods used as an alternative to the methods required in §§ 761.272 or 761.292. Any person conducting comparison testing under this

Confirmation of compliance with the cleanup levels in §761.61(a)(4) is only verifiable for the area sampled in accordance with this subpart. Do not make conclusions or extrapolations about PCB concentrations outside of the area which has been cleaned up and verified based on the results of this verification sampling.

§ 761.283 Determination of the number of samples to collect and sample collection locations.

This section addresses how to determine the number of samples to collect and sample collection locations for bulk PCB remediation waste and porous surfaces destined to remain at a cleanup site after cleanup.

(a) *Minimum number of samples.* (1) At each separate cleanup site at a PCB remediation waste location, take a minimum of three samples for each type of bulk PCB remediation waste or porous surface at the cleanup site, regardless of the amount of each type of waste that is present. There is no upper limit to the number of samples required or allowed.

(2) This is an example of how to calculate the minimum number of required samples at a PCB remediation waste location. There are three distinct cleanup sites at this example location: a loading dock, a transformer storage lot, and a disposal pit. The minimum number of samples to take appears in parentheses after each type of waste for each cleanup site. The PCB remediation wastes present at the loading dock are concrete (three samples) and clay soil (three samples). The nonliquid PCB remediation wastes present at the transformer storage lot are oily soil (three samples), clay soil (three samples) and gravel (three samples). The PCB remediation wastes present at the disposal pit are sandy soil (three samples), clay soil (three samples), oily soil (three samples), industrial sludge (three samples), and gravel (three samples).

(b) *Selection of sample locations—general.* (1)(i) Use a square-based grid system to overlay the entire area to be sampled. Orient the grid axes on a magnetic north-south line centered in the area and an east-west axis perpendicular to the magnetic north-south axis also centered in the area.

(ii) If the site is recleaned based on the results of cleanup verification conducted in accordance with §761.61(a)(6), follow the procedures in paragraph (b) of this section for locating sampling points after the recleaning, but reorient the grid axes established in paragraph (b)(1)(i) of this section by moving the origin one meter in the direction of magnetic north and one meter in the direction east of magnetic north.

(2) Mark out a series of sampling points 1.5 meters apart oriented to the grid axes. The sampling points shall proceed in every direction to the extent sufficient to result in a two-dimensional grid completely overlaying the sampling area.

(3) Collect a sample at each point if the grid falls in the cleanup area. Analyze all samples either individually or according to the compositing schemes provided in the procedures at §761.289. So long as every sample collected at a grid point is analyzed as either an individual sample or as part of a composite sample, there are no other restrictions on how many samples are analyzed.

(c) *Selection of sample locations—small cleanup sites.* When a cleanup site is sufficiently small or irregularly shaped that a square grid with a grid interval of 1.5 meters will not result in a minimum of three sampling points for each type of bulk PCB remediation waste or porous surface at the cleanup site, there are two options.

(1) Use a smaller square grid interval and the procedures in paragraph (b) of this section.

(2) Use the following coordinate-based random sampling scheme. If the site is recleaned based on the results of cleanup verification conducted in accordance with §761.61(a)(6), follow the procedures in this section for locating sampling points after the recleaning, but select three new pairs of sampling coordinates.

(i) Beginning in the southwest corner (lower left when facing magnetic north) of the area to be sampled, measure in centimeters (or inches) the maximum magnetic north-south dimension of the area to be sampled. Next, beginning in the southwest corner, measure

in centimeters (or inches) the maximum magnetic east-west dimension of the area to be sampled. Designate the north-south and east-west dimensions (describing the west and south boundaries, respectively, of the area to be sampled), as the reference axes of a square-based grid system.

(ii) Use a random number table or random number generator to select a pair of coordinates that will locate the sample within the area to be sampled. The first coordinate in the pair is the measurement on the north-south axis. The second coordinate in the pair is the measurement on the east-west axis. Collect the sample at the intersection of an east-west line drawn through the measured spot on the north-south axis, and a north-south line drawn through the measured spot on the east-west axis. If the cleanup site is irregularly shaped and this intersection falls outside the cleanup site, select a new pair of sampling coordinates. Continue to select pairs of sampling coordinates until three are selected for each type of bulk PCB remediation waste or porous surface at the cleanup site.

(d) *Area of inference.* Analytical results for an individual sample point apply to the sample point and to an area of inference extending to four imaginary lines parallel to the grid axes and one half grid interval distant from the sample point in four different directions. The area of inference forms a square around the sample point. The sides of the square are parallel to the grid axes and one grid interval in length. The sample point is in the center of the square area of inference. The area of inference from a composite sample is the total of the areas of the individual samples included in the composite.

§ 761.286 Sample size and procedure for collecting a sample.

At each selected sampling location for bulk PCB remediation waste or porous surfaces, collect at least 20 milliliters of waste, or a portion of sufficient weight for the chemical analyst to measure the concentration of PCBs and still have sufficient analytical detection sensitivity to reproducibly measure PCBs at the levels designated in § 761.61(a)(4). Use a core sampler having a diameter ≥2 cm and ≤3 cm. Collect waste to a maximum depth of 7.5 cms.

§ 761.289 Compositing samples.

Compositing is a method of combining several samples of a specific type of bulk PCB remediation waste or porous surface from nearby locations for a single chemical analysis. There are two procedures for compositing bulk PCB remediation waste samples. These procedures are based on the method for selecting sampling site locations in § 761.283(b) and (c). The single chemical analysis of a composite sample results in an averaging of the concentrations of its component samples. The area of inference of a composite is determined by the area of inference of each of its component samples as described in § 761.283(d). Compositing is not mandatory. However, if compositing is used, it must be performed in accordance with the following procedures.

(a) *Compositing in the field or in a laboratory.* Compositing may occur either in the field or in a laboratory. Prepare composite samples using equal volumes of each constituent or component sample. Composited samples must be from the same type of bulk PCB remediation waste or porous surface (see the example at § 761.283(a)(2)). Mix composite samples thoroughly. From each well-mixed composite sample, take a portion of sufficient weight for the chemical analyst to measure the concentration of PCBs and still have sufficient analytical detection sensitivity to reproducibly measure PCBs at the levels designated in § 761.61(a)(4).

(b)(1) *Compositing from samples collected at grid points in accordance with § 761.283(b).* There are two kinds of composite sampling procedures depending on the original source of contamination of the site.

(i) The first procedure is for sites with multiple point sources of contamination (such as an old electrical equipment storage area, a scrap yard, or repair shop) or for unknown sources of contamination. Under this compositing scheme, composite a maximum of nine samples for each type of bulk PCB remediation waste or porous surface at the cleanup site. The maximum dimensions of the area enclosing